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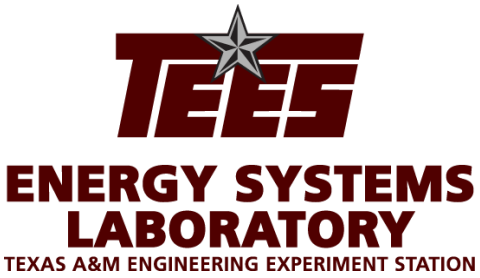

TAMU Project

Energy Consumption Data Quality Assurance/Quality Control Assessment Report for the

Month of June 2016

Prepared for

Utility & Energy Services

Division of Administration

Texas A&M University

July 2016

Acknowledgements

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Executive Summary

This report analyzes the energy use data collected from 567 meters in 190 buildings and complexes (approximately 17,100,000 GSF) on the campus of Texas A&M University in College Station, Texas. The report consists of five sections: 1) The summary of the monthly energy consumption per meter ID, 2) The quality control and assurance analysis of incorrect or incomplete energy use patterns, 3) Energy consumption time series plots, 4) Energy Balance plots, and 5) Energy Balance plots with filled-in consumption data. Section one contains the summary of monthly energy consumption for each of the TAMU buildings. Section two includes the reviews on each of those building energy use patterns that presented problems in the metered data. Section three and four are a collection of the plots generated for the energy use analysis, as reference to indicate and validate the quality of the metered energy data. The Section five includes the energy balance plots with filled-in energy data.

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I. Summary of Monthly Consumption

Table I-1 June 2016 Monthly Consumption for TAMU Buildings

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0270	Emerging Technologies Building	305,316	007469	ELE	185,742	kWh	
0270	Emerging Technologies Building	305,316	007470	ELE	48,730	kWh	
0270	Emerging Technologies Building	305,316	007471	CHW	3,574,646	mBtu	#, (1)
0270	Emerging Technologies Building	305,316	007475	HHW	191,193	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007715	ELE	54,012	kWh	
0275	Liberal Arts and Arts & Humanities Building	107,500	007716	CHW	572,104	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007717	HHW	39,695	mBtu	
0290	Wells Residence Hall	67,283	006870	ELE	28,016	kWh	
0290	Wells Residence Hall	67,283	001984	CHW	924,022	mBtu	(2)
0290	Wells Residence Hall	67,283	001988	HHW	358,449	mBtu	(2)
0291	Rudder Residence Hall	67,283	000351	ELE	43,072	kWh	
0291	Rudder Residence Hall	67,283	002132	CHW	893,849	mBtu	(2)
0291	Rudder Residence Hall	67,283	002136	HHW	312,786	mBtu	
0292	Eppright Residence Hall	67,283	000002	ELE	32,663	kWh	
0292	Eppright Residence Hall	67,283	002262	CHW	769,581	mBtu	#, (1)
0292	Eppright Residence Hall	67,283	002266	HHW	296,408	mBtu	#, (1)
0293	Appelt Residence Hall	82,767	000003	ELE	39,245	kWh	
0293	Appelt Residence Hall	82,767	002062	CHW	840,829	mBtu	*, (2)
0293	Appelt Residence Hall	82,767	002066	HHW	332,262	mBtu	*, (2)
0294	Lechner Residence Hall	59,541	000004	ELE	34,206	kWh	
0294	Lechner Residence Hall	59,541	002285	CHW	753,832	mBtu	(2)
0294	Lechner Residence Hall	59,541	002289	HHW	528,485	mBtu	(2)
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006536	ELE	123,705	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006537	ELE	98,452	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006534	CHW	1,636,251	mBtu	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006535	HHW	208,645	mBtu	
0353	Bright Aerospace Building	148,837	001569	ELE	145,871	kWh	
0353	Bright Aerospace Building	148,837	002746	CHW	1,340,711	mBtu	(2)
0353	Bright Aerospace Building	148,837	002757	HHW	48,279	mBtu	(2)
0358	Davis Football Player Development Center	20,026	007699	ELE	28,313	kWh	
0358	Davis Football Player Development Center	20,026	007701	CHW	276,125	mBtu	
0358	Davis Football Player Development Center	20,026	007702	HHW	1,540	mBtu	
0361	Bright Football Complex	124,971	008461	ELE	194,856	kWh	
0361	Bright Football Complex	124,971	002547	CHW	1,633,767	mBtu	
0361	Bright Football Complex	124,971	002551	HHW	115,193	mBtu	
0367	Kyle Field	489,000	000336	ELE	159,565	kWh	
0367	Kyle Field	489,000	008861	ELE	87,801	kWh	
0367	Kyle Field	489,000	008862	ELE	99,285	kWh	
0367	Kyle Field	489,000	008863	ELE	168,565	kWh	
0367	Kyle Field	489,000	008864	ELE	169,638	kWh	
0367	Kyle Field	489,000	008865	ELE	73,106	kWh	
0367	Kyle Field	489,000	008866	ELE	127,144	kWh	
0367	Kyle Field	489,000	008867	ELE	156,994	kWh	
0367	Kyle Field	489,000	008868	ELE	78,225	kWh	
0367	Kyle Field	489,000	008852	CHW	3,207,016	mBtu	
0367	Kyle Field	489,000	008026	CHW	3,990,407	mBtu	
0367	Kyle Field	489,000	008856	HHW	152,511	mBtu	
0367	Kyle Field	489,000	008027	HHW	741,167	mBtu	
0376	Chemistry Building Addition	115,797	006229	ELE	200,197	kWh	
0376	Chemistry Building Addition	115,797	006230	ELE	109,888	kWh	
0376	Chemistry Building Addition	115,797	007115	CHW	5,051,870	mBtu	
0376	Chemistry Building Addition	115,797	007119	HHW	813,594	mBtu	
0383	Koldus Building	110,272	001488	ELE	158,101	kWh	
0383	Koldus Building	110,272	002863	CHW	972,522	mBtu	
0383	Koldus Building	110,272	002874	HHW	107,857	mBtu	
0384	Sanders Corps of Cadets Center	19,363	001554	ELE	22,790	kWh	
0384	Sanders Corps of Cadets Center	19,363	002583	CHW	254,376	mBtu	#, (1)
0384	Sanders Corps of Cadets Center	19,363	002587	HHW	72,862	mBtu	#, (1)
0325-0385	CE TTI Office & Lab Building	157,844	009122	ELE	170,226	kWh	
0325-0385	CE TTI Office & Lab Building	157,844	009123	CHW	1,483,673	mBtu	
0325-0385	CE TTI Office & Lab Building	157,844	009124	HHW	64,635	mBtu	
0385-A	CE TTI Office & Lab Building - Pi R Square	9,393	004240	CHW	152,788	mBtu	
0385-A	CE TTI Office & Lab Building - Pi R Square	9,393	004245	HHW	5,604	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	001428	ELE	184,454	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	001429	ELE	349,361	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	002250	CHW	5,836,593	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	006871	CHW	108,191	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	002254	HHW	457,537	mBtu	

Table I-1 June 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0387	Richardson Petroleum Engineering Building	113,700	005870	ELE	83,465	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005872	ELE	103,636	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005805	CHW	1,846,005	mBtu	
0387	Richardson Petroleum Engineering Building	113,700	005809	HHW	120,538	mBtu	
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	001573	ELE	194,901	kWh	
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	002906	CHW	1,719,523	mBtu	
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	002910	HHW	142,336	mBtu	
0394	Underwood Residence Hall	81,730	000014	ELE	6,969	kWh	(2)
0394	Underwood Residence Hall	81,730	002117	CHW	NA	mBtu	*
0394	Underwood Residence Hall	81,730	002121	HHW	NA	mBtu	*
0398	Langford Architecture Center Building A	116,619	003806	ELE	93,073	kWh	
0398	Langford Architecture Center Building A	116,619	003951	CHW	1,361,429	mBtu	
0398	Langford Architecture Center Building A	116,619	003955	HHW	446,107	mBtu	
0400	Spence Hall Dorm 1	31,952	009169	ELE	61,348	kWh	
0400	Spence Hall Dorm 1	31,952	009170	CHW	442,241	mBtu	*, (1)
0400	Spence Hall Dorm 1	31,952	009171	HHW	87,713	mBtu	*, (1)
0401	Kiest Hall Dorm 2	35,967	009150	ELE	55,725	kWh	
0401	Kiest Hall Dorm 2	35,967	009151	CHW	714,638	mBtu	*
0401	Kiest Hall Dorm 2	35,967	009152	HHW	116,149	mBtu	*
0402	Briggs Hall Dorm 3	32,139	009205	ELE	NA	kWh	*
0402	Briggs Hall Dorm 3	32,139	009206	CHW	509,079	mBtu	*
0402	Briggs Hall Dorm 3	32,139	009207	HHW	178,244	mBtu	*
0403	Fountain Hall Dorm 4	36,893	009222	ELE	NA	kWh	*
0403	Fountain Hall Dorm 4	36,893	009223	CHW	480,645	mBtu	
0403	Fountain Hall Dorm 5	36,893	009224	HHW	118,369	mBtu	
0404	Gainer Hall Dorm 5	33,904	009227	ELE	NA	kWh	*
0404	Gainer Hall Dorm 5	33,904	009228	CHW	383,190	mBtu	*
0404	Gainer Hall Dorm 5	33,904	009229	HHW	72,871	mBtu	*
0405-0407-1402	Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center	91,310	007721	ELE	50,599	kWh	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007722	CHW	580,565	mBtu	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007723	HHW	40,511	mBtu	
0405	Lacy Hall - Dorm 6	36,867	007922	ELE	17,360	kWh	
0405	Lacy Hall - Dorm 6	36,867	007918	CHW	400,324	mBtu	
0405	Lacy Hall - Dorm 6	36,867	007919	HHW	66,821	mBtu	
0407	Harrell Hall - Dorm 8	36,943	007729	ELE	17,496	kWh	
1402	Buzbee Leadership Learning Center	17,500	007725	CHW	215,728	mBtu	
1402	Buzbee Leadership Learning Center	17,500	007726	HHW	636	mBtu	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	54,179	007981	ELE	48,773	kWh	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	54,179	007982	CHW	574,036	mBtu	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	54,179	007983	HHW	48,549	mBtu	
0406	Leonard Hall - Dorm 7	36,893	008011	ELE	8,898	kWh	
0406	Leonard Hall - Dorm 7	36,893	008012	ELE	8,824	kWh	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008005	CHW	155,898	mBtu	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008006	HHW	5,915	mBtu	
0412	Moses Residence Hall	40,828	000027	ELE	25,922	kWh	
0412	Moses Residence Hall	40,828	002384	CHW	655,515	mBtu	(2)
0412	Moses Residence Hall	40,828	002395	HHW	153,123	mBtu	
0415	Davis-Gary Residence Hall	40,828	000030	ELE	25,278	kWh	
0415	Davis-Gary Residence Hall	40,828	002532	CHW	622,162	mBtu	
0415	Davis-Gary Residence Hall	40,828	002543	HHW	133,081	mBtu	
0419	Legett Residence Hall	45,134	000031	ELE	NA	kWh	*
0419	Legett Residence Hall	45,134	002218	CHW	NA	mBtu	*
0419	Legett Residence Hall	45,134	002222	HHW	NA	mBtu	*
0420	Milner Hall	48,268	009144	ELE	22,936	kWh	
0420	Milner Hall	48,268	009145	CHW	345,328	mBtu	
0420	Milner Hall	48,268	009146	HHW	33,209	mBtu	
0422	Walton Residence Hall	51,494	000378	ELE	66,580	kWh	
0422	Walton Residence Hall	51,494	002364	HHW	46,262	mBtu	
0424	Hotard Hall	18,500	000032	ELE	13,287	kWh	
0424	Hotard Hall	18,500	002657	CHW	192,487	mBtu	
0424	Hotard Hall	18,500	002668	HHW	42,142	mBtu	
0425	Henderson Hall	22,185	001553	ELE	16,041	kWh	
0425	Henderson Hall	22,185	002607	CHW	319,782	mBtu	
0425	Henderson Hall	22,185	002611	HHW	77,888	mBtu	
0426-0427-0428	FHK Complex	154,349	000331	ELE	91,318	kWh	
0426-0427-0428	FHK Complex	154,349	002848	CHW	1,631,309	mBtu	
0426-0427-0428	FHK Complex	154,349	002859	HHW	234,164	mBtu	
0430	Schumacher Residence Hall	38,957	000034	ELE	30,035	kWh	
0430	Schumacher Residence Hall	38,957	002015	CHW	473,529	mBtu	
0430	Schumacher Residence Hall	38,957	002030	HHW	26,677	mBtu	

Table I-1 June 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0359	Architecture Building B	28,545	005518	ELE	20,502	kWh	
0432	Architecture Building C	73,020	005584	ELE	69,015	kWh	
0359-0432	Architecture Building B&C	101,565	006419	CHW	697,295	mBtu	
0359-0432	Architecture Building B&C	101,565	006423	HHW	138,478	mBtu	
0434	Luedecke Building (Cyclotron)	80,646	005555	ELE	135,119	kWh	
0434	Luedecke Building (Cyclotron)	80,646	005558	ELE	997,596	kWh	
0434	Luedecke Building (Cyclotron)	80,646	006664	CHW	1,971,578	mBtu	
0434	Luedecke Building (Cyclotron)	80,646	006668	HHW	47,129	mBtu	
0435	Harrington Education Center Office Tower	130,844	001546	ELE	121,012	kWh	
0435	Harrington Education Center Office Tower	130,844	002792	CHW	1,222,643	mBtu	
0435	Harrington Education Center Office Tower	130,844	002796	HHW	324,699	mBtu	
0436	Reed-McDonald Building	77,435	006868	ELE	86,026	kWh	
0436	Reed-McDonald Building	77,435	002419	CHW	2,171,887	mBtu	
0436	Reed-McDonald Building	77,435	002423	HHW	271,504	mBtu	
0438	Harrington Education Center Classroom Building	61,860	003630	ELE	33,321	kWh	
0438	Harrington Education Center Classroom Building	61,860	002784	CHW	281,138	mBtu	
0438	Harrington Education Center Classroom Building	61,860	002788	HHW	919	mBtu	
0433-0440-0441-04	Mosher Commons Krueger Dunn Aston	577,584	009099	ELE	262,862	kWh	
0433	Mosher Residence Hall	155,430	009083	ELE	63,444	kWh	(2)
0433	Mosher Residence Hall	155,430	002485	CHW	2,000,363	mBtu	*
0433	Mosher Residence Hall	155,430	002489	HHW	647,596	mBtu	*, (2)
0440	Commons Hall	84,500	009237	CHW	210,966	mBtu	#, (1)
0440	Commons Hall	84,500	009238	HHW	24,678	mBtu	#, (1)
0441	Krueger Residence Hall	112,133	009091	ELE	57,628	kWh	
0441	Krueger Residence Hall	112,133	002504	CHW	1,135,046	mBtu	*, #, (1)
0441	Krueger Residence Hall	112,133	002500	HHW	583,445	mBtu	*, #, (1)
0442	Dunn Residence Hall	112,133	009095	ELE	90,228	kWh	
0442	Dunn Residence Hall	112,133	002519	CHW	963,411	mBtu	
0442	Dunn Residence Hall	112,133	002515	HHW	264,868	mBtu	
0447	Aston Residence Hall	113,388	009087	ELE	51,557	kWh	
0447	Aston Residence Hall	113,388	002474	CHW	1,237,589	mBtu	
0447	Aston Residence Hall	113,388	002470	HHW	405,410	mBtu	
0443	Oceanography & Meteorology Building	180,316	005322	ELE	174,769	kWh	
0443	Oceanography & Meteorology Building	180,316	005323	ELE	62,359	kWh	
0443	Oceanography & Meteorology Building	180,316	006388	CHW	1,555,672	mBtu	
0443	Oceanography & Meteorology Building	180,316	006392	HHW	235,910	mBtu	
0444	Peterson Building	84,831	004714	ELE	149,035	kWh	
0444	Peterson Building	84,831	002922	CHW	1,313,541	mBtu	
0444	Peterson Building	84,831	006435	HHW	130,976	mBtu	
0445-0517	Teague Research Center and DPC Annex	89,735	003948	ELE	27,203	kWh	
0445-0517	Teague Research Center and DPC Annex	89,735	004719	ELE	52,029	kWh	
0445	Teague Research Center	63,515	006411	CHW	430,282	mBtu	
0445	Teague Research Center	63,515	006415	HHW	27,291	mBtu	
0517	DPC Annex	26,220	006563	CHW	696,950	mBtu	
0517	DPC Annex	26,220	006567	HHW	294,591	mBtu	
0446	Rudder Theatre Complex	209,293	002977	ELE	110,773	kWh	
0446	Rudder Theatre Complex	209,293	002980	ELE	30,681	kWh	
0446	Rudder Theatre Complex	209,293	004297	CHW	2,190,587	mBtu	(2)
0446	Rudder Theatre Complex	209,293	004309	HHW	795,310	mBtu	(2)
0446	Rudder Tower	92,947	001550	ELE	38,311	kWh	
0446	Rudder Tower	92,947	001551	ELE	53,910	kWh	
0446	Rudder Tower	92,947	002455	CHW	946,312	mBtu	
0446	Rudder Tower	92,947	002459	HHW	35,782	mBtu	
0448	Adams Band Hall	55,248	000978	ELE	54,251	kWh	
0448	Adams Band Hall	55,248	002555	CHW	499,326	mBtu	
0448	Adams Band Hall	55,248	002566	HHW	270,449	mBtu	
0449	Biological Sciences Building - West	96,038	003978	ELE	187,348	kWh	
0449	Biological Sciences Building - West	96,038	003981	CHW	1,714,554	mBtu	
0449	Biological Sciences Building - West	96,038	003985	HHW	97,770	mBtu	
0450	Duncan Dining Hall	128,482	000300	ELE	46,813	kWh	
0450	Duncan Dining Hall	128,482	002998	CHW	782,883	mBtu	
0450	Duncan Dining Hall	128,482	003009	HHW	124,764	mBtu	
0454	MSC (East Main)	392,000	007600	ELE	283,674	kWh	
0454	MSC (West Main)	392,000	007601	ELE	193,519	kWh	
0454	MSC BOR	392,000	008047	ELE	15,989	kWh	
0454	MSC	392,000	007584	CHW	3,510,409	mBtu	
0454	MSC BOR	392,000	004184	CHW	519,166	mBtu	
0454	MSC	392,000	007585	HHW	217,443	mBtu	
0454	MSC BOR	392,000	004196	HHW	201,818	mBtu	

Table I-1 June 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0456	Military Sciences Building	43,808	006939	CHW	558,560	mBtu	
0456	Military Sciences Building	43,808	006943	HHW	160,186	mBtu	
0457	TAES Annex Building	16,364	005863	ELE	14,290	kWh	
0457	TAES Annex Building	16,364	005913	CHW	105,846	mBtu	
0457	TAES Annex Building	16,364	005917	HHW	31,390	mBtu	
0461	Coke Building	24,466	004008	ELE	27,563	kWh	
0461	Coke Building	24,466	005307	CHW	168,535	mBtu	
0461	Coke Building	24,466	004023	HHW	1,013	mBtu	
0462	Academic Building	82,555	005861	ELE	17,592	kWh	
0462	Academic Building	82,555	005903	ELE	34,479	kWh	
0462	Academic Building	82,555	005905	CHW	660,988	mBtu	*
0462	Academic Building	82,555	005909	HHW	303,320	mBtu	*
0463	Psychology Building	48,215	001575	ELE	39,574	kWh	
0463	Psychology Building	48,215	002941	CHW	580,350	mBtu	
0463	Psychology Building	48,215	002945	HHW	23,872	mBtu	
0464	State Chemist Building	20,027	005839	ELE	13,357	kWh	
0464	State Chemist Building	20,027	005837	ELE	8,702	mBtu	
0464	State Chemist Building	20,027	005841	HHW	182	mBtu	
0465	Butler Hall	29,699	003997	ELE	33,303	kWh	
0465	Butler Hall	29,699	004000	CHW	431,904	mBtu	(2)
0465	Butler Hall	29,699	004004	HHW	115,635	mBtu	(2)
0467	Biological Sciences Building - East	62,273	001543	ELE	189,349	kWh	(2)
0467	Biological Sciences Building - East	62,273	003851	CHW	998,083	mBtu	
0467	Biological Sciences Building - East	62,273	003862	HHW	93,327	mBtu	
0468	Evans Library	712,093	000304	ELE	254,552	kWh	
0468	Evans Library	712,093	000318	ELE	133,707	kWh	
0468	Evans Library	712,093	000319	ELE	95,461	kWh	
0468	Evans Library	712,093	000320	ELE	81,092	kWh	
0468	Evans Library	712,093	006429	ELE	84,823	kWh	*
0468	Evans Library	712,093	003701	CHW	1,592,772	mBtu	(2)
0468	Evans Library	712,093	003895	CHW	1,968,164	mBtu	#, (1), (2)
0468	Evans Library	712,093	003903	CHW	426,665	mBtu	(2)
0468	Evans Library	712,093	003911	CHW	1,104,179	mBtu	(2)
0468	Evans Library	712,093	003712	HHW	76,593	mBtu	(2)
0468	Evans Library	712,093	003899	HHW	270,212	mBtu	#, (1), (2)
0468	Evans Library	712,093	003907	HHW	47,990	mBtu	(2)
0468	Evans Library	712,093	003922	HHW	26,872	mBtu	(2)
0468	Evans Library	712,093	005303	HHW	37,516	mBtu	(2)
0469	Central Campus Parking Garage	251,304	000306	ELE	45,008	kWh	
0469	Central Campus Parking Garage	2,844	003716	CHW	69,494	mBtu	
0469	Central Campus Parking Garage	2,844	003720	HHW	4,939	mBtu	
0470	Glasscock History Bldg	39,887	006407	ELE	17,064	kWh	
0470	Glasscock History Bldg	39,887	006638	CHW	264,400	mBtu	
0470	Glasscock History Bldg	39,887	006642	HHW	8,648	mBtu	
0471	Pavilion	40,062	001455	ELE	35,060	kWh	
0471	Pavilion	40,062	002769	CHW	304,541	mBtu	
0471	Pavilion	40,062	002780	HHW	617	mBtu	(2)
0472	Animal Industries	44,856	009042	ELE	46,835	kWh	
0472	Animal Industries	44,856	009109	CHW	685,293	mBtu	
0472	Animal Industries	44,856	009113	HHW	36,096	mBtu	
0473	Williams Administration Building	69,898	007945	ELE	54,249	kWh	
0473	Williams Administration Building	69,898	007946	CHW	722,007	mBtu	
0473	Williams Administration Building	69,898	007947	HHW	123,791	mBtu	
0474	YMCA Building	36,035	007524	ELE	25,585	kWh	
0474	YMCA Building	36,035	007525	CHW	230,782	mBtu	
0474	YMCA Building	36,035	007526	HHW	7,317	mBtu	
0476	Francis Hall	36,850	008015	ELE	34,475	kWh	
0476	Francis Hall	36,850	008033	CHW	539,915	mBtu	
0476	Francis Hall	36,850	008034	HHW	204	mBtu	
0477	Anthropology Building	51,592	001558	ELE	27,696	kWh	
0477	Anthropology Building	51,592	003664	CHW	590,740	mBtu	
0477	Anthropology Building	51,592	003668	HHW	21,003	mBtu	
0478	Scoates Hall	62,228	007961	ELE	51,416	kWh	(2)
0478	Scoates Hall	62,228	007968	CHW	552,318	mBtu	(2)
0478	Scoates Hall	62,228	007969	HHW	55,616	mBtu	(2)
0480	Bolton Hall	39,686	006845	ELE	33,351	kWh	
0480	Bolton Hall	39,686	007012	CHW	254,532	mBtu	
0480	Bolton Hall	39,686	007016	HHW	41,486	mBtu	

Table I-1 June 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0481	Heaton Hall	13,640	005712	ELE	NA	kWh	*
0481	Heaton Hall	13,640	007531	CHW	274,795	mBtu	
0481	Heaton Hall	13,640	007535	HHW	163,032	mBtu	
0482	Fermier Hall	19,074	005779	ELE	24,370	kWh	
0482	Fermier Hall	19,074	005878	CHW	325,979	mBtu	
0482	Fermier Hall	19,074	005881	HHW	91,478	mBtu	
0483	Thompson Hall	81,404	003688	ELE	61,067	kWh	
0483	Thompson Hall	81,404	003887	CHW	374,717	mBtu	
0483	Thompson Hall	81,404	003891	HHW	16,006	mBtu	
0484	Chemistry Building	205,393	007152	ELE	98,435	kWh	
0484	Chemistry Building	205,393	007556	ELE	13,819	kWh	
0484	Chemistry Building	205,393	007557	ELE	102,885	kWh	
0484	Chemistry Building	205,393	007559	ELE	172,977	kWh	
0484	Chemistry Building	205,393	007028	CHW	3,466,556	mBtu	
0484	Chemistry Building	205,393	007223	CHW	5,597,482	mBtu	
0484	Chemistry Building	205,393	007032	HHW	364,866	mBtu	# (1)
0484	Chemistry Building	205,393	007227	HHW	790,351	mBtu	
0490	Halbouty Geosciences Building	120,874	006691	ELE	62,580	kWh	
0490	Halbouty Geosciences Building	120,874	006695	ELE	102,524	kWh	
0490	Halbouty Geosciences Building	120,874	006896	CHW	1,824,423	mBtu	
0490	Halbouty Geosciences Building	120,874	006913	CHW	839,895	mBtu	
0490	Halbouty Geosciences Building	120,874	006900	HHW	264,560	mBtu	
0490	Halbouty Geosciences Building	120,874	006917	HHW	174,438	mBtu	
0492	Civil Engineering Building	56,537	005783	ELE	67,176	kWh	
0492	Civil Engineering Building	56,537	005950	CHW	470,559	mBtu	
0492	Civil Engineering Building	56,537	005954	HHW	132,723	mBtu	
0495	Sbisa Dining Hall	94,233	000352	ELE	124,186	kWh	
0495	Sbisa Dining Hall	94,233	000353	ELE	89,280	kWh	
0495	Sbisa Dining Hall	94,233	001951	CHW	1,873,637	mBtu	
0495	Sbisa Dining Hall	94,233	001957	HHW	249,618	mBtu	
0496	Utilities & Energy Services Central Office	46,110	007706	ELE	12,124	kWh	(2)
0496	Utilities & Energy Services Central Office	46,110	006929	CHW	213,863	mBtu	(2)
0496	Utilities & Energy Services Central Office	46,110	006933	HHW	16,833	mBtu	(2)
0499	Engineering Innovation Center	28,339	001561	ELE	20,989	kWh	
0499	Engineering Innovation Center	28,339	002672	CHW	105,254	mBtu	* (2)
0499	Engineering Innovation Center	28,339	002683	HHW	9,149	mBtu	* (2)
0501	Concrete Materials Laboratory	9,600	005791	ELE	8,410	kWh	
0506	Nagle Hall	32,306	001484	ELE	12,470	kWh	(2)
0506	Nagle Hall	32,306	003619	CHW	488,323	mBtu	
0506	Nagle Hall	32,306	003623	HHW	9,455	mBtu	
0507	Veterinary Medical Science Building	69,367	003013	ELE	83,663	kWh	
0507	Veterinary Medical Science Building	69,367	003640	CHW	1,710,962	mBtu	*
0507	Veterinary Medical Science Building	69,367	003644	HHW	369,383	mBtu	*
0508	Veterinary Teaching Hospital	96,416	003022	ELE	95,048	kWh	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004166	CHW	2,383,542	mBtu	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004170	HHW	302,149	mBtu	
0511	Heep Laboratory Building	40,476	005787	ELE	65,695	kWh	
0511	Heep Laboratory Building	40,476	005821	CHW	676,197	mBtu	
0511	Heep Laboratory Building	40,476	005825	HHW	165,352	mBtu	
0512	All Faiths Chapel	8,999	004340	ELE	7,149	kWh	
0512	All Faiths Chapel	8,999	004288	CHW	124,396	mBtu	
0512	All Faiths Chapel	8,999	004293	HHW	26,584	mBtu	
0513	Doherty Building	42,336	000299	ELE	63,373	kWh	
0513	Doherty Building	42,336	002898	CHW	1,008,010	mBtu	
0513	Doherty Building	42,336	002902	HHW	223,676	mBtu	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007558	ELE	14,220	kWh	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007487	CHW	130,691	mBtu	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007491	HHW	2,248	mBtu	
0516	Computing Services Center	30,014	005259	ELE	484,978	kWh	
0516	Computing Services Center	30,014	003959	CHW	1,548,951	mBtu	
0516	Computing Services Center	30,014	003963	HHW	2	mBtu	
0520	Beutel Health Center	63,318	003785	ELE	60,654	kWh	
0520	Beutel Health Center	63,318	003933	CHW	610,205	mBtu	#, (1)
0520	Beutel Health Center	63,318	003944	HHW	148,660	mBtu	#, (1)
0521	Heldenfels Hall	104,949	001547	ELE	86,441	kWh	
0521	Heldenfels Hall	104,949	002962	CHW	1,311,345	mBtu	
0521	Heldenfels Hall	104,949	002973	HHW	161,330	mBtu	
0524	Blocker building	257,953	001545	ELE	210,162	kWh	*
0524	Blocker building	257,953	002914	CHW	1,588,023	mBtu	
0524	Blocker building	257,953	002918	HHW	4,001	mBtu	(2)

Table I-1 June 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
0548	Clements Residence Hall	62,156	000048	ELE	29,763	kWh	
0548	Clements Residence Hall	62,156	002729	CHW	1,152,343	mBtu	
0548	Clements Residence Hall	62,156	002740	HHW	372,379	mBtu	
0549	Haas Residence Hall	69,668	001398	ELE	39,047	kWh	*
0549	Haas Residence Hall	69,668	002983	CHW	1,093,056	mBtu	
0549	Haas Residence Hall	69,668	002994	HHW	510,157	mBtu	
0550	McFadden Residence Hall	62,156	000339	ELE	29,071	kWh	
0550	McFadden Residence Hall	62,156	002188	CHW	1,042,285	mBtu	#, (1)
0550	McFadden Residence Hall	62,156	002192	HHW	466,380	mBtu	#, (1)
0652	Neeley Residence Hall	69,668	000056	ELE	26,198	kWh	#, (1)
0652	Neeley Residence Hall	69,668	002147	CHW	635,602	mBtu	*, #, (1)
0652	Neeley Residence Hall	69,668	002151	HHW	226,705	mBtu	*
0653	Hobby Residence Hall	62,156	000057	ELE	32,052	kWh	
0653	Hobby Residence Hall	62,156	002401	CHW	853,547	mBtu	
0653	Hobby Residence Hall	62,156	002405	HHW	296,341	mBtu	
0682	Wisenbaker Engineering Research Center	177,704	005246	ELE	234,160	kWh	
0682	Wisenbaker Engineering Research Center	177,704	003879	CHW	2,072,248	mBtu	
0682	Wisenbaker Engineering Research Center	177,704	003883	HHW	125,589	mBtu	
0740	McNew Laboratory	20,904	005874	ELE	52,621	kWh	
0740	McNew Laboratory	20,904	005974	CHW	529,569	mBtu	#, (1)
0740	McNew Laboratory	20,904	005968	HHW	79,661	mBtu	#, (1)
0806	Soil Testing Labs	5,544	006875	ELE	25,682	kWh	
0815	Entomology Research Lab	17,618	005799	ELE	28,647	kWh	
0815	Entomology Research Lab	17,618	006043	CHW	139,927	mBtu	
0880	TVMC-Small Animal Building	3,260	005958	CHW	37,246	mBtu	#, (1)
0880	TVMC-Small Animal Building	3,260	005962	HHW	21	mBtu	(2)
0972	Laboratory Animal Care Building	52,178	007063	ELE	144,043	kWh	*
0972	Laboratory Animal Care Building	52,178	007067	ELE	51,858	kWh	
0972	Laboratory Animal Care Building	52,178	007071	CHW	3,586,402	mBtu	
0972	Laboratory Animal Care Building	52,178	006991	HHW	159,638	mBtu	
1020	Vivarium III	12,234	005857	ELE	22,034	kWh	
1020	Vivarium III	12,234	005997	CHW	276,515	mBtu	
1020	Vivarium III	12,234	006001	HHW	3,422	mBtu	
1026	Veterinary Medicine Administration	94,680	006072	ELE	146,441	kWh	*
1026	Veterinary Medicine Administration	94,680	006049	CHW	1,504,860	mBtu	
1026	Veterinary Medicine Administration	98,680	006053	HHW	302,319	mBtu	* (2)
1041	Texas Vet Med Diagnostic Lab	55,169	001466	ELE	95,038	kWh	
1041	Texas Vet Med Diagnostic Lab	55,169	001539	ELE	79,781	kWh	
1041	Texas Vet Med Diagnostic Lab	55,169	003817	CHW	1,171,824	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	004137	CHW	2,097,951	mBtu	
1041	Texas Vet Med Diagnostic Lab	55,169	003821	HHW	67,628	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	004130	HHW	171,427	mBtu	
1042	Forest Science Laboratory Building	9,632	006036	ELE	36,906	kWh	
1085	Veterinary Small Animal Hospital	103,440	004136	ELE	234,043	kWh	
1085	Veterinary Small Animal Hospital	103,440	003656	CHW	2,571,968	mBtu	
1085	Veterinary Small Animal Hospital	103,440	003660	HHW	216,082	mBtu	
1089	Utilities Energy Office Annex	2,937	006964	ELE	5,314	kWh	
1146	Biological Control Facility	13,492	005795	ELE	36,611	kWh	(2)
1146	Biological Control Facility	13,492	005887	CHW	179,751	mBtu	
1146	Biological Control Facility	13,492	005891	HHW	39,263	mBtu	
1156	Physical Plant Administration & Shops	101,704	007483	ELE	149,788	kWh	
1156	Physical Plant Administration & Shops	101,704	007679	CHW	496,920	mBtu	(2)
1156	Physical Plant Administration & Shops	101,704	007683	HHW	77,323	mBtu	
1184	Veterinary Anatomic Pathology	17,223	001445	ELE	57,537	kWh	
1184	Veterinary Anatomic Pathology	17,223	006995	CHW	776,937	mBtu	
1184	Veterinary Anatomic Pathology	17,223	006999	HHW	90,563	mBtu	(2)
1194	Veterinary Large Animal Hospital	140,865	005256	ELE	106,021	kWh	
1194	Veterinary Large Animal Hospital	140,865	003016	ELE	70,808	kWh	
1194	Veterinary Large Animal Hospital	140,865	007455	ELE	39,871	kWh	
1194	Veterinary Large Animal Hospital	140,865	003648	CHW	3,074,150	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007456	CHW	298,894	mBtu	
1194	Veterinary Large Animal Hospital	140,865	003652	HHW	471,622	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007457	HHW	32,668	mBtu	
1197	Veterinary Research Building	114,666	006355	ELE	71,108	kWh	(2)
1197	Veterinary Research Building	114,666	006359	ELE	34,048	kWh	(2)
1197	Veterinary Research Building	114,666	006062	CHW	3,596,728	mBtu	
1197	Veterinary Research Building	114,666	006066	HHW	441,765	mBtu	
1416	Hullabaloo Residence Hall	253,452	007845	ELE	156,703	kWh	
1416	Hullabaloo Residence Hall	253,452	007846	CHW	1,416,082	mBtu	
1416	Hullabaloo Residence Hall	253,452	007847	HHW	103,978	mBtu	

Table I-1 June 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
1450	University Apartments - Laundry at the Gardens	1,428	006885	ELE	6,049	kWh	
1451	University Apartments - The Gardens J	33,535	006981	ELE	20,540	kWh	
1453	University Apartments - The Gardens L	33,535	006884	ELE	19,916	kWh	
1454	University Apartments - The Gardens F	33,535	006980	ELE	19,574	kWh	*
1455	University Apartments - The Gardens G	33,535	006882	ELE	20,732	kWh	*
1456	University Apartments - The Gardens H	33,535	007962	ELE	21,687	kWh	
1457	University Apartments - The Gardens M	33,535	007503	ELE	21,161	kWh	
1458	University Apartments - The Gardens N	33,535	007504	ELE	18,092	kWh	
1459	University Apartments - The Gardens P	33,535	007505	ELE	22,840	kWh	
1460	University Apartments - The Gardens Q	33,535	007506	ELE	21,166	kWh	
1497	Utilities & Energy Services Business Office	3,480	007082	ELE	3,864	kWh	
1497	Utilities & Energy Services Business Office	3,480	006341	CHW	33,928	mBtu	
1497	Utilities & Energy Services Business Office	3,480	006345	HHW	4	mBtu	
1501	Kleberg Center	165,031	007449	ELE	277,290	kWh	
1501	Kleberg Center	165,031	002624	CHW	2,127,130	mBtu	(2)
1501	Kleberg Center	165,031	002628	HHW	570,756	mBtu	
1502	Heep Center	158,979	001556	ELE	259,385	kWh	
1502	Heep Center	158,979	002599	CHW	2,763,476	mBtu	
1502	Heep Center	158,979	002603	HHW	268,857	mBtu	
1503	Cater-Mattil Hall	27,958	007977	ELE	78,586	kWh	
1503	Cater-Mattil Hall	27,958	008001	CHW	762,960	mBtu	
1504	Reynolds Medical Sciences Building	169,859	003975	ELE	254,463	kWh	
1504	Reynolds Medical Sciences Building	169,859	003989	CHW	2,631,010	mBtu	
1504	Reynolds Medical Sciences Building	169,859	003993	HHW	313,375	mBtu	
1505	Rosenthal Meat Science & Technology Center	30,889	003627	ELE	139,186	kWh	
1505	Rosenthal Meat Science & Technology Center	30,889	002573	CHW	269,186	mBtu	
1505	Rosenthal Meat Science & Technology Center	30,889	002577	HHW	18,305	mBtu	
1506	Horticulture-Forest Science Building	118,648	001544	ELE	165,546	kWh	
1506	Horticulture-Forest Science Building	118,648	003967	CHW	1,201,814	mBtu	
1506	Horticulture-Forest Science Building	118,648	003971	HHW	90,433	mBtu	
1507	Biochemistry-Biophysics Building	166,079	001459	ELE	165,593	kWh	
1507	Biochemistry-Biophysics Building	166,079	001460	ELE	159,059	kWh	
1507	Biochemistry-Biophysics Building	166,079	003025	CHW	3,084,069	mBtu	
1507	Biochemistry-Biophysics Building	166,079	003029	HHW	542,049	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	005638	ELE	28,596	kWh	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006005	CHW	244,718	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006009	HHW	971	mBtu	
1509	Medical Sciences Library	84,183	000350	ELE	98,102	kWh	
1509	Medical Sciences Library	84,183	003777	CHW	838,045	mBtu	
1509	Medical Sciences Library	84,183	003781	HHW	38,079	mBtu	
1510	Wehner Building	259,681	006849	ELE	203,203	kWh	
1510	Wehner Building	259,681	006685	ELE	260,923	kWh	
1510	Wehner Building	259,681	002687	CHW	2,231,757	mBtu	
1510	Wehner Building	259,681	002691	HHW	167,125	mBtu	
1511	West Campus Library Facility	68,125	004342	ELE	100,082	kWh	
1511	West Campus Library Facility	68,125	004313	CHW	945,573	mBtu	
1511	West Campus Library Facility	68,125	004318	HHW	125,487	mBtu	
1512	Southern Crop Improvement Greenhouse	48,154	005931	ELE	107,705	kWh	(1)
1513	Borlaug Center for Southern Crop Improvement	68,739	005802	ELE	313,402	kWh	
1513	Borlaug Center for Southern Crop Improvement	68,739	005936	CHW	1,938,500	mBtu	
1513	Borlaug Center for southern Crop Improvement	68,739	005895	HHW	140,720	mBtu	
1518	TX School of Rural Public Health A	69,079	005273	ELE	77,732	kWh	
1519	TX School of Rural Public Health B	24,761	005274	ELE	49,421	kWh	#, (1)
1520	TX School of Rural Public Health C	13,264	005275	ELE	103,360	kWh	#, (1)
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005294	CHW	1,955,996	mBtu	
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005298	HHW	147,701	mBtu	(1)
1525	Nuclear Magnetic Resonance Facility	37,282	006718	ELE	86,974	kWh	
1525	Nuclear Magnetic Resonance Facility	37,282	006715	CHW	1,198,283	mBtu	
1525	Nuclear Magnetic Resonance Facility	37,282	006716	HHW	350,099	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006286	ELE	419,422	kWh	
1530	Interdisciplinary Life Sciences Building	218,540	006288	ELE	227,450	kWh	
1530	Interdisciplinary Life Sciences Building	218,540	006290	CHW	5,853,181	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006294	HHW	829,427	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007205	ELE	116,642	kWh	
1535	Agriculture and Life Sciences Building	168,353	007206	CHW	896,210	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007207	HHW	16,999	mBtu	
1536	AgriLife Services Building	80,907	007571	ELE	49,034	kWh	
1536	AgriLife Services Building	80,907	007572	CHW	350,430	mBtu	
1536	AgriLife Services Building	80,907	007573	HHW	13,931	mBtu	

Table I-1 June 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
1538	Agriculture Program Visitors Center	12,923	007209	ELE	12,496	kWh	
1538	Agriculture Program Visitors Center	12,923	007210	CHW	109,677	mBtu	
1538	Agriculture Program Visitors Center	12,923	007211	HHW	8,529	mBtu	
1540	Physical Education Activity Program Building	116,900	007881	ELE	68,352	kWh	
1540	Physical Education Activity Program Building	116,900	007878	CHW	677,635	mBtu	
1540	Physical Education Activity Program Building	116,900	007879	HHW	64,297	mBtu	
1550	Olsen Field at Bluebell Park	60,537	007560	ELE	163,049	kWh	
1554	Reed Arena	230,000	007582	ELE	176,616	kWh	
1554	Reed Arena	230,000	006243	ELE	874	kWh	#, (1)
1554	Reed Arena	230,000	006244	ELE	89,020	kWh	
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007576	CHW	3,019,267	mBtu	
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007578	HHW	547,172	mBtu	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007581	ELE	99,485	kWh	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007575	CHW	599,762	mBtu	(1)
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007577	HHW	170,709	mBtu	
1559	West Campus Parking Garage	1,541,457	001453	ELE	170,742	kWh	
1559	West Campus Parking Garage	13,000	004322	CHW	58,548	mBtu	(2)
1559	West Campus Parking Garage	13,000	004327	HHW	6,413	mBtu	
1560	Student Recreation Center	334,642	000363	ELE	205,146	kWh	
1560	Student Recreation Center	334,642	000366	ELE	454,277	kWh	
1560	Student Recreation Center	334,642	002933	CHW	5,681,765	mBtu	
1560	Student Recreation Center	334,642	002937	HHW	956,953	mBtu	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009197	ELE	86,160	kWh	*
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009198	CHW	734,914	mBtu	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009199	HHW	50,904	mBtu	
1591	White Creek Apartment 2	179,467	008528	ELE	100,462	kWh	
1591	White Creek Apartment 2	179,467	008529	CHW	851,073	mBtu	
1591	White Creek Apartment 2	179,467	008533	HHW	79,737	mBtu	
1592	White Creek Apartment 3	179,467	008538	ELE	69,815	kWh	
1592	White Creek Apartment 3	179,467	008539	CHW	682,756	mBtu	
1592	White Creek Apartment 3	179,467	008543	HHW	54,563	mBtu	
1600	Gilchrist TTI Building	67,143	005286	ELE	51,087	kWh	
1600	Gilchrist TTI Building	67,143	002649	CHW	385,692	mBtu	
1600	Gilchrist TTI Building	67,143	002653	HHW	36,820	mBtu	
1601	International Ocean Discovery Building	86,576	006351	ELE	127,101	kWh	(2)
1601	International Ocean Discovery Building	86,576	006382	CHW	321,347	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008144	CHW	80,906	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008145	HHW	10,460	mBtu	(2)
1604	Offshore Technology Research Center	40,014	006659	ELE	95,480	kWh	
1604	Offshore Technology Research Center	40,014	006660	ELE	0	kWh	(2)
1604	Offshore Technology Research Center	40,014	008142	CHW	615,290	mBtu	
1604	Offshore Technology Research Center	40,014	008143	HHW	95,705	mBtu	
1606	George Bush Presidential Library & Museum	121,678	000244	ELE	115,876	kWh	
1606	George Bush Presidential Library & Museum	121,678	002808	CHW	1,644,110	mBtu	
1606	George Bush Presidential Library & Museum	121,678	002812	HHW	323,053	mBtu	
1607	Allen Building	133,327	000243	ELE	89,135	kWh	
1607	Allen Building	133,327	002800	CHW	728,719	mBtu	
1607	Allen Building	133,327	002804	HHW	24,731	mBtu	
1608	Annenberg Presidential Conference Center	65,688	000245	ELE	69,414	kWh	
1608	Annenberg Presidential Conference Center	65,688	002761	CHW	1,005,265	mBtu	
1608	Annenberg Presidential Conference Center	65,688	002765	HHW	263,160	mBtu	
1609	TTI Headquarters	66,707	006495	ELE	57,064	kWh	
1609	TTI Headquarters	66,707	006496	CHW	509,586	mBtu	
1609	TTI Headquarters	66,707	006497	HHW	33,184	mBtu	
1611	Engineering Research Building	35,000	008462	ELE	167,629	kWh	(2)
1611	Engineering Research Building	35,000	008463	CHW	2,392,001	mBtu	(2)
1611	Engineering Research Building	35,000	008467	HHW	384,861	mBtu	(2)
1800	General Services Complex	203,369	005441	ELE	194,415	kWh	
1800	General Services Complex	203,369	005468	CHW	1,236,371	mBtu	
1800	General Services Complex	203,369	005472	HHW	43,872	mBtu	
1810	Office of the State Chemist Building	31,735	009073	ELE	61,194	kWh	*
1810	Office of the State Chemist Building	31,735	005460	CHW	761,255	mBtu	
1810	Office of the State Chemist Building	31,735	005464	HHW	75,126	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006705	ELE	215,047	kWh	
1811	Vet Med Research Bldg Addition	52,993	006706	CHW	2,037,190	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006707	HHW	358,473	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005548	ELE	88,531	kWh	*
1900	Texas Institute for Genomic Medicine	34,120	005545	CHW	2,026,318	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005546	HHW	276,788	mBtu	

Table I-1 June 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft^2)	MeterID	Type	Monthly Consumption	Units	Comments
1904	Texas A&M Institute for Preclinical Studies A	113,559	006364	ELE	256,816	kWh	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006365	CHW	3,729,245	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006366	HHW	590,038	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007517	ELE	202,080	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007518	ELE	167,658	kWh	(1)
1910	National Center for Therapeutics Manufacturing	149,924	007519	CHW	5,642,515	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007520	HHW	1,121,558	mBtu	
1911	Multi-Species Research Building	21,000	009138	ELE	23,994	kWh	
1911	Multi-Species Research Building	21,000	009129	CHW	530,266	mBtu	
1911	Multi-Species Research Building	21,000	009133	HHW	122,717	mBtu	
10226	NCTM Manufacturing Building	113,397	007648	CHW	4,908,703	mBtu	
10226	NCTM Manufacturing Building	113,397	007649	HHW	896,751	mBtu	
10226	NCTM Manufacturing Building	113,397	008133	HHW	66,137	mBtu	

1 mBtu = 1 000 Btu

NA: Not available
Monthly consumption in blue: Modified values
* : Missing data
# : Questionable data
(1): Consumption estimated and documented in the report *Part II - Data Analysis: Energy Use Estimation and Observations Section 2*
(2): Observation(s) documented in the report *Part II - Data Analysis: Energy Use Estimation and Observations Section 3*
(3): Missing data or changed consumption levels due to construction

II. Data Analysis: Energy Use Estimation and Observation

II-1 Meters with Missing Energy Consumption Data

During the month of June 2016, 46 meters in 28 buildings and complexes have missing daily data. The missing data have been filled in using consumption models based on the past data if available or using linear interpolation or some sort of average, and the monthly consumption has been estimated with the filled-in daily consumption. Table II-1 is the list of meters with missing data.

Table II-1 Meters with missing data during June 2016

Building No.	Building Name	MeterID	Type	Unit	Original Monthly Consumption	Estimated Monthly Consumption	# of Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
293	Appelt Residence Hall	002062	CHW	mBtu	223,121	840,829	22									A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
293	Appelt Residence Hall	002066	HHW	mBtu	88,215	332,262	22									A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
394	Underwood Residence Hall	002117	CHW	mBtu	NA	***	30																												
394	Underwood Residence Hall	002121	HHW	mBtu	NA	***	30																												
400	Spence Hall Dorm 1	009170	CHW	mBtu	793,716	**	6	A	A	A	A	A	A	A																					
400	Spence Hall Dorm 1	009171	HHW	mBtu	405,914	**	6	A	A	A	A	A	A	A																					
401	Kiest Hall Dorm 2	009151	CHW	mBtu	537,977	714,638	8	A	A	A	A	A	A	A	A																				
401	Kiest Hall Dorm 2	009152	HHW	mBtu	90,519	116,149	8	A	A	A	A	A	A	A	A																				
402	Briggs Hall Dorm 3	009205	ELE	kWh	NA	***	30																												
402	Briggs Hall Dorm 3	009206	CHW	mBtu	356,355	509,079	1								A	A	A	A	A	A	A	A	A												
402	Briggs Hall Dorm 3	009207	HHW	mBtu	124,771	178,244	1								A	A	A	A	A	A	A	A	A												
403	Fountain Hall Dorm 4	009222	ELE	kWh	NA	***	30																												
404	Gainer Hall Dorm 5	009227	ELE	kWh	NA	***	31																												
404	Gainer Hall Dorm 5	009228	CHW	mBtu	173,093	383,190	17	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A											
404	Gainer Hall Dorm 5	009229	HHW	mBtu	32,486	72,871	17	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A											
419	Legett Residence Hall	000031	ELE	kWh	NA	***	30																												
419	Legett Residence Hall	002218	CHW	mBtu	NA	***	30																												
419	Legett Residence Hall	002222	HHW	mBtu	NA	***	30																												
433	Mosher Residence Hall	002485	CHW	mBtu	366,558	2,000,363	25						M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
433	Mosher Residence Hall	002489	HHW	mBtu	150,290	647,596	25						M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
441	Krueger Residence Hall	002504	CHW	mBtu	23	**	25						M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
441	Krueger Residence Hall	002500	HHW	mBtu	5,510	**	25						M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
462	Academic Building	005905	CHW	mBtu	470,132	660,988	8																						M	M	M	M	M	M	M
462	Academic Building	005909	HHW	mBtu	218,661	303,320	8																						M	M	M	M	M	M	M
468	Evans Library	006429	ELE	kWh	84,823	*	1	LI																											
481	Heaton Hall	005712	ELE	kWh	NA	***	30																												
499	Engineering Innovation Center	002672	CHW	mBtu	NA	105,254	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
499	Engineering Innovation Center	002683	HHW	mBtu	NA	9,149	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
507	Veterinary Medical Science Building	003640	CHW	mBtu	NA	1,710,962	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
507	Veterinary Medical Science Building	003644	HHW	mBtu	NA	369,383	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
524	Blocker Building	001545	ELE	kWh	210,162	*	1																												
549	Haas Residence Hall	001398	ELE	kWh	18,266	39,047	21				A			A	A				A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A
652	Neeley Residence Hall	000056	ELE	kWh	19,199	**	3																												
652	Neeley Residence Hall	002147	CHW	mBtu	149,484	**	22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M							
652	Neeley Residence Hall	002151	HHW	mBtu	53,992	226,705	22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M							
972	Laboratory Animal Care Building	007063	ELE	kWh	144,043	*	1																												M
1026	Veterinary Medicine Administration	007063	ELE	kWh	146,441	*	2																												M
1026	Veterinary Medicine Administration	006053	HHW	mBtu	NA	302,319	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1041	Texas Vet Med Diagnostic Lab	003817	CHW	mBtu	1,159,802	1,171,824	1																												M
1041	Texas Vet Med Diagnostic Lab	003821	HHW	mBtu	67,628	*	2																						M	M					M
1454	University Apartments - The Gardens F	006980	ELE	kWh	NA	19,574	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1455	University Apartments - The Gardens G	006882	ELE	kWh	NA	20,732	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1497	Utilities & Energy Services Business Office	007082	ELE	kWh	3,864	*	2																												
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	009197	ELE	kWh	34,456	86,160	18	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A											
1810	Office of the State Chemist Building	009073	ELE	kWh	NA	61,194	30	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
1900	Texas Institute for Genomic Medicine	005548	ELE	kWh	88,531	88,531	2			M																				M					

* Monthly consumption evaluated from the cumulative data is not affected by the missing data.
** See Table II-2 for the estimated consumption.
*** Consumption is not estiamted because reliable consumtpion model is not available.
NA: Not available

II-2 Meters with Estimated Consumption for Problematic Data

During the month of June 2016, 30 meters in 19 buildings have estimated daily consumption because the recorded consumption is found to be problematic or questionable. For each of these meters, alternative consumption has been estimated using the best possible method. Table II-2 lists these meters with indications of the days with estimated data. Detailed descriptions for individual cases follow.

Table II-2 Meters with problematic data during June 2016

Building No.	Building Name /MeterID(s)	Type	Unit	Original Monthly Consumption	Estimated Monthly Consumption	# of days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
270	Emerging Technologies Building																																			
	007471	CHW	mBtu	3,515,057	3,574,646	1																			M											
292	Eppright Residence Hall																																			
	002262	CHW	mBtu	803,087	769,581	2	M	M																												
	002266	HHW	mBtu	339,369	296,408	2	M	M																												
384	Sanders Corps of Cadets Center																																			
	002583	CHW	mBtu	205,831	254,376	20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M									
	002587	HHW	mBtu	24,003	72,862	20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M									
400	Spence Hall Dorm 1																																			
	009170	CHW	mBtu	**	442,241	15															A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	009171	HHW	mBtu	**	87,713	15															A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
440	Commons Hall																																			
	009237	CHW	mBtu	-8,352,257	210,966	1						L																								
	009238	HHW	mBtu	-3,444,189	24,678	1						L																								
441	Krueger Residence Hall																																			
	002504	CHW	mBtu	**	1,135,046	5	M	M	M	M	M																									
	002500	HHW	mBtu	**	583,445	5	M	M	M	M	M																									
468	Evans Library																																			
	003895	CHW	mBtu	3,526,974	1,968,164	13	A	A	A	A	A	A	A	A	A	A	A	A	A																	
	003899	HHW	mBtu	158,074	270,212	13	A	A	A	A	A	A	A	A	A	A	A	A	A																	
484	Chemistry Building																																			
	007032	HHW	mBtu	0	364,866	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
520	Beutel Health Center																																			
	003933	CHW	mBtu	430,551	610,205	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	003944	HHW	mBtu	40,315	148,660	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
550	McFadden Residence Hall																																			
	002188	CHW	mBtu	895,834	1,042,285	17							M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M						
	002192	HHW	mBtu	257,352	466,380	17							M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M						
652	Neeley																																			
	000056	ELE	kWh	**	26,198	27	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	002147	CHW	mBtu	**	635,602	3																							M	M	M					
740	McNew Laboratory																																			
	005974	CHW	mBtu	428,464	529,569	13	M	M	M	M	M	M	M	M	M	M	M	M	M																	
	005968	HHW	mBtu	1,304	79,661	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
880	Small Animal Building																																			
	005958	CHW	mBtu	23,729	37,246	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1512	Southern Crop Improvement Greenhouse																																			
	005931	ELE	kWh	102,225	107,705	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1519	TX School of Rural Public Health B																																			
	005274	ELE	kWh	103,360	49,421	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1520	TX School of Rural Public Health C																																			
	005275	ELE	kWh	49,421	103,360	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1518-1519-1520	TX School of Rural Public Health A, B, and C																																			
	005298	HHW	mBtu	113,124	147,701	7																					M	M			M	M	M	M	M	
1554	Reed Arena																																			
	006243	ELE	kWh	337	874	26					M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1558	Cox-McFerrin Center for Aggie Basketball																																			
	007575	CHW	mBtu	720,944	599,762	21										M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1910	National Center for Therapeutics Manufacturing																																			
	007518	ELE	kWh	-9,832,459	167,658	1						M																								

NA: Not available

** See Table II-1 for the original consumption.

Notes: The colored cells means the consumption for the day appears to be problematic. The letter in the colored cell indicates the method for estimation. M: model, F: multiplication factor, L: linear interpolation, A: average, and C: correction of the reset cumulative reading

Emerging Technologies Building (TAMU Bldg #270)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007471	1	6/19/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period.	6/19/2016

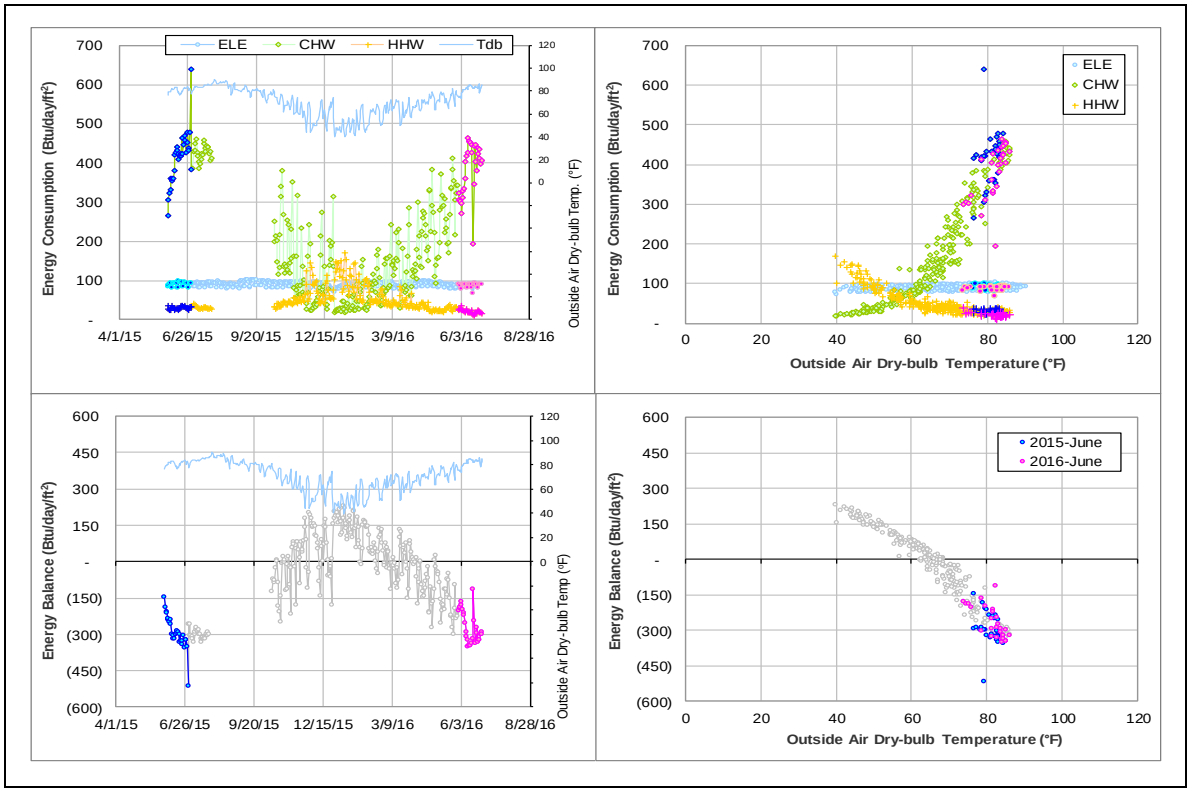
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	007471	6/19/2016	Flow Rate	Decreased

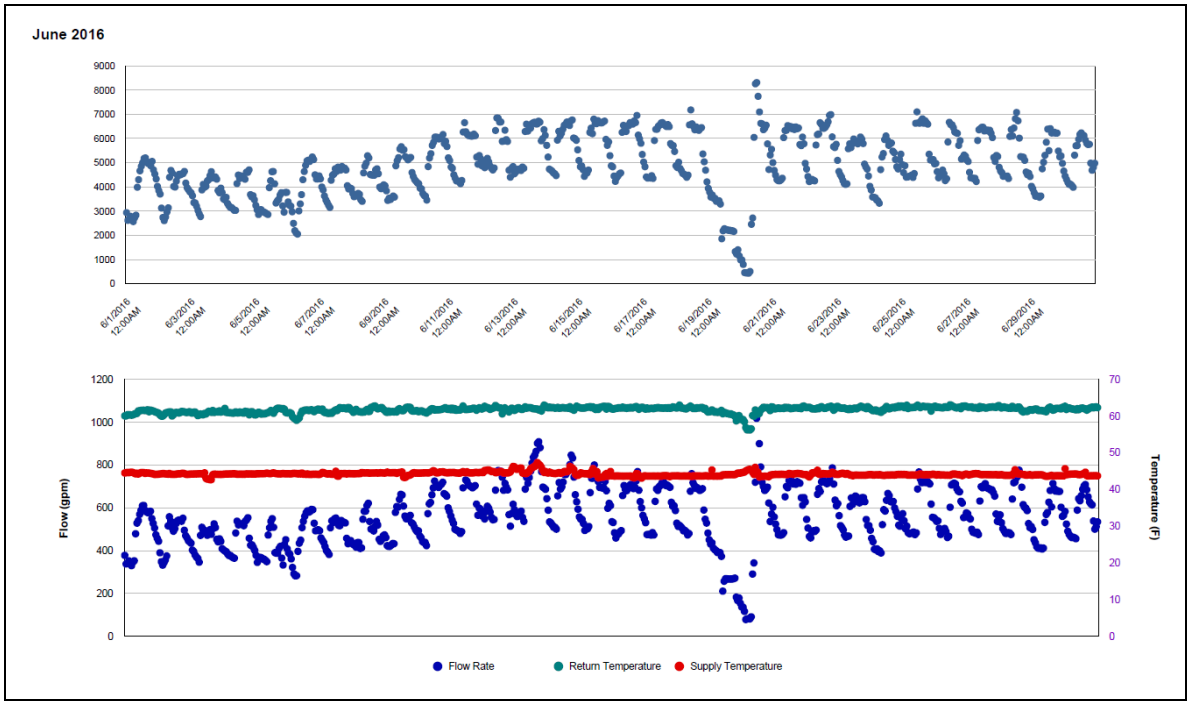
Quantitative descriptions and comments

The CHW consumption suddenly decreased by 200 Btu/day/ft^2 on 6/19/2016 due to the decrease of the CHW flow rate. The consumption was estimated by a model.

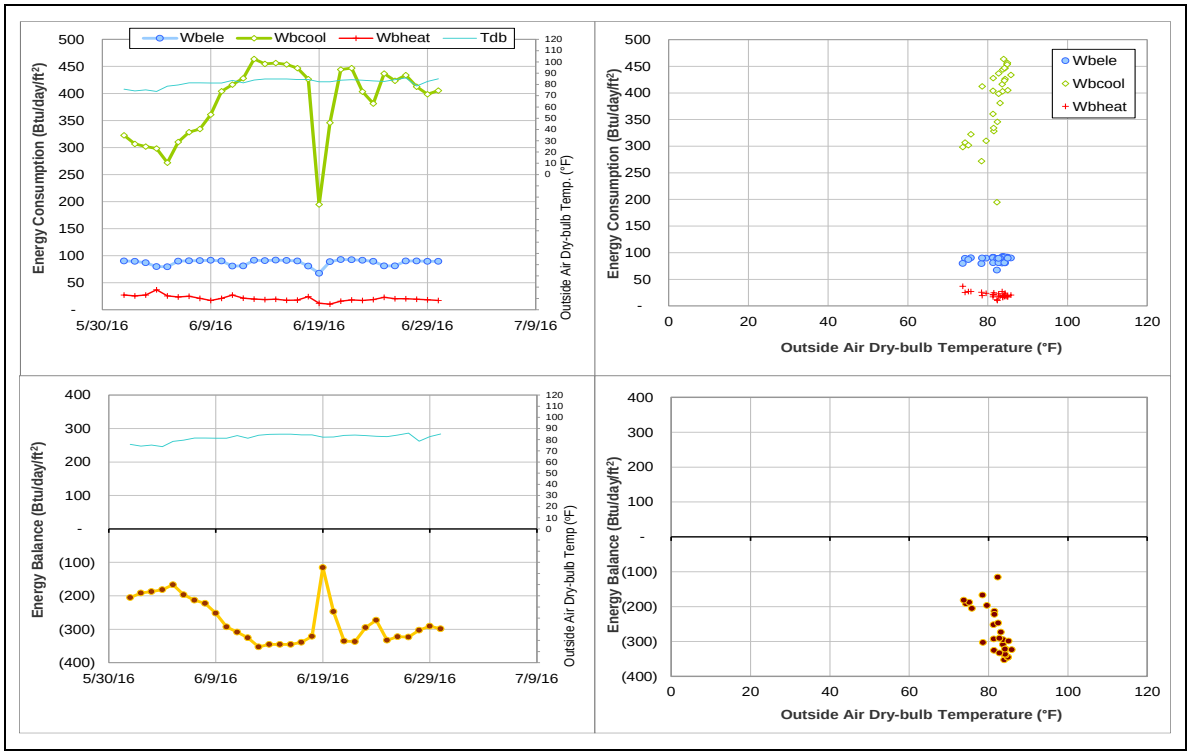
Explanatory Figure: 13 months energy balance plot with original data



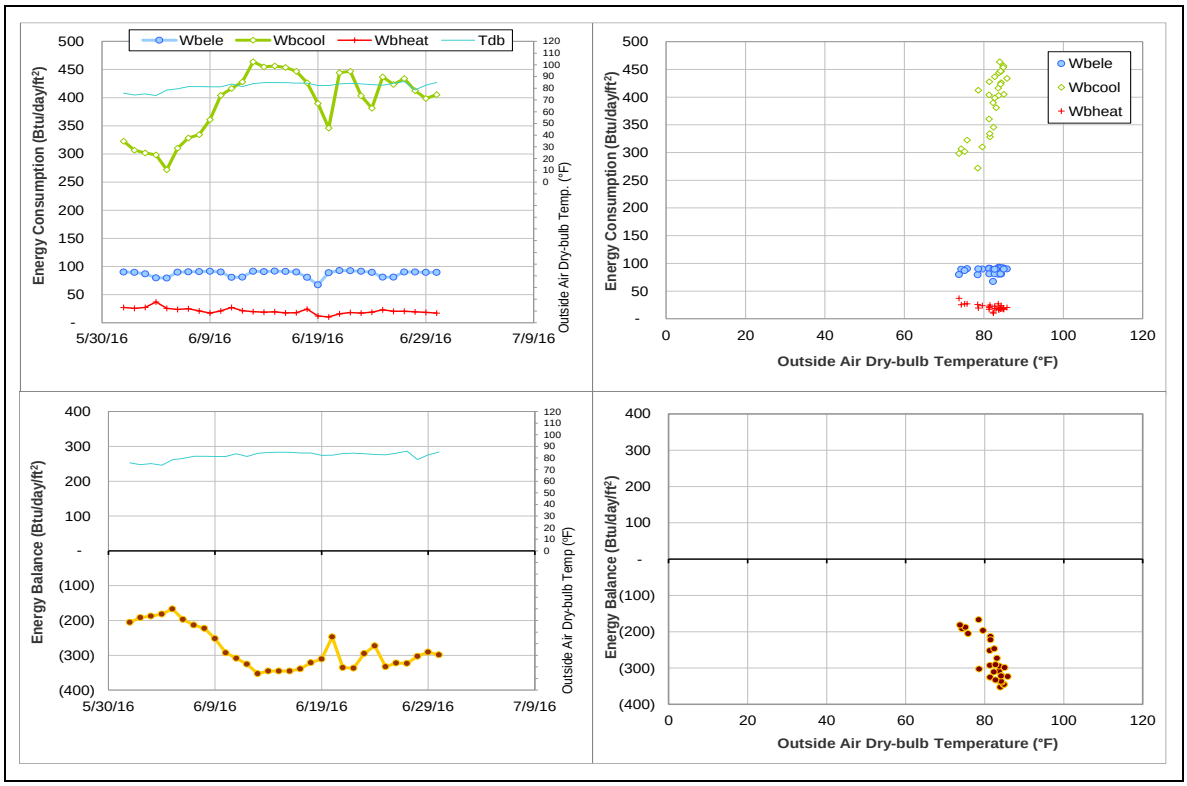
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during June 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Eppright Residence Hall (TAMU Bldg #292)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002262	2	6/1/2016 – 6/2/2016	Model
HHW	002266	2	6/1/2016 – 6/2/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level has increased suddenly.	4/30/2016 – 6/2/2016
HHW	The consumption level has increased suddenly.	4/30/2016 – 6/2/2016

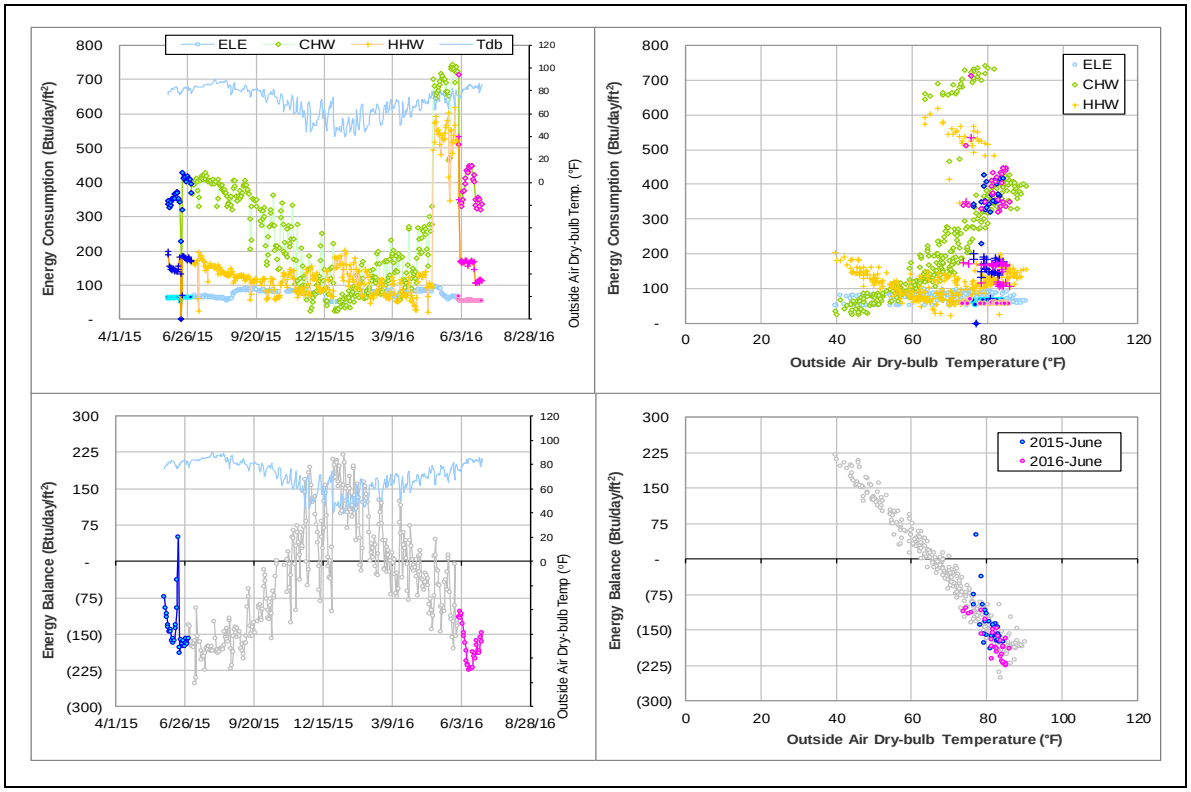
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002262	4/30/2016 – 6/2/2016	Flow Rate	Increased
HHW	002266	4/30/2016 – 6/2/2016	Flow Rate	Increased

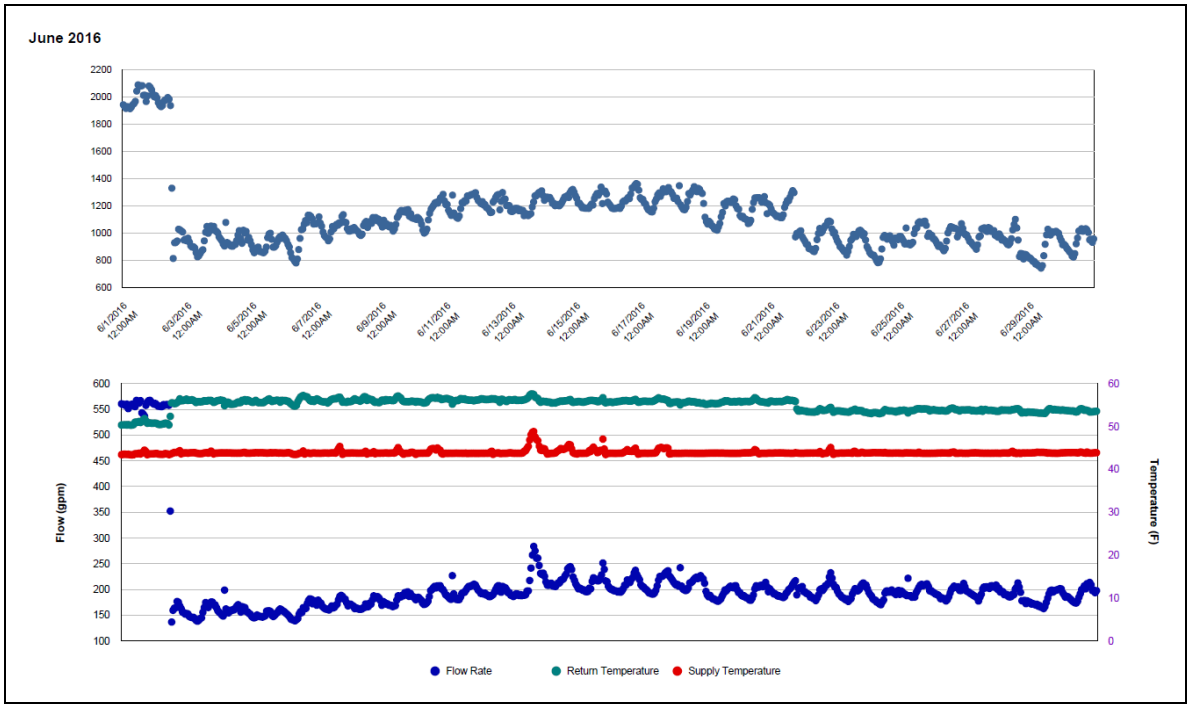
Quantitative descriptions and comments

Both the CHW and HHW consumption suddenly increased about 450 Btu/day/ft^2 during 4/30/2016-6/2/2016, as the CHW and HHW flow rates increased 350 gpm and 60 gpm, respectively. After increased, the CHW/HHW consumption level was much higher than the other residence halls. However, the energy balance pattern didn't change. The consumption was estimated by models.

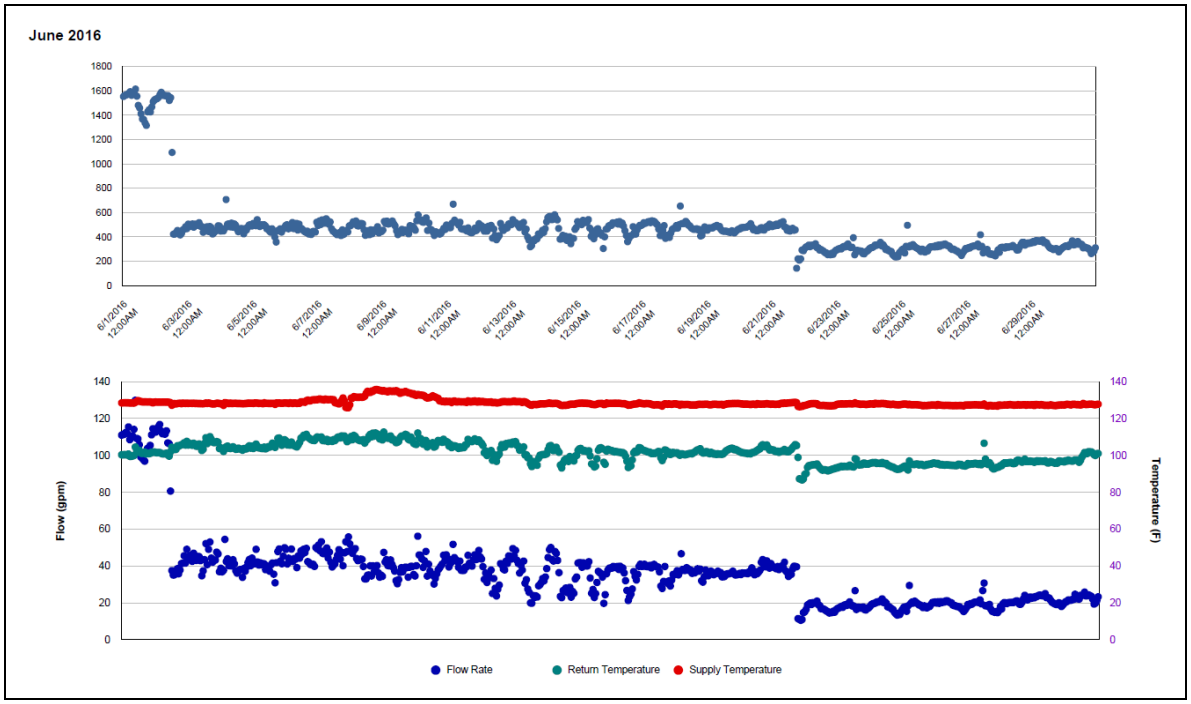
Explanatory Figure: 13 months energy balance plot with original data



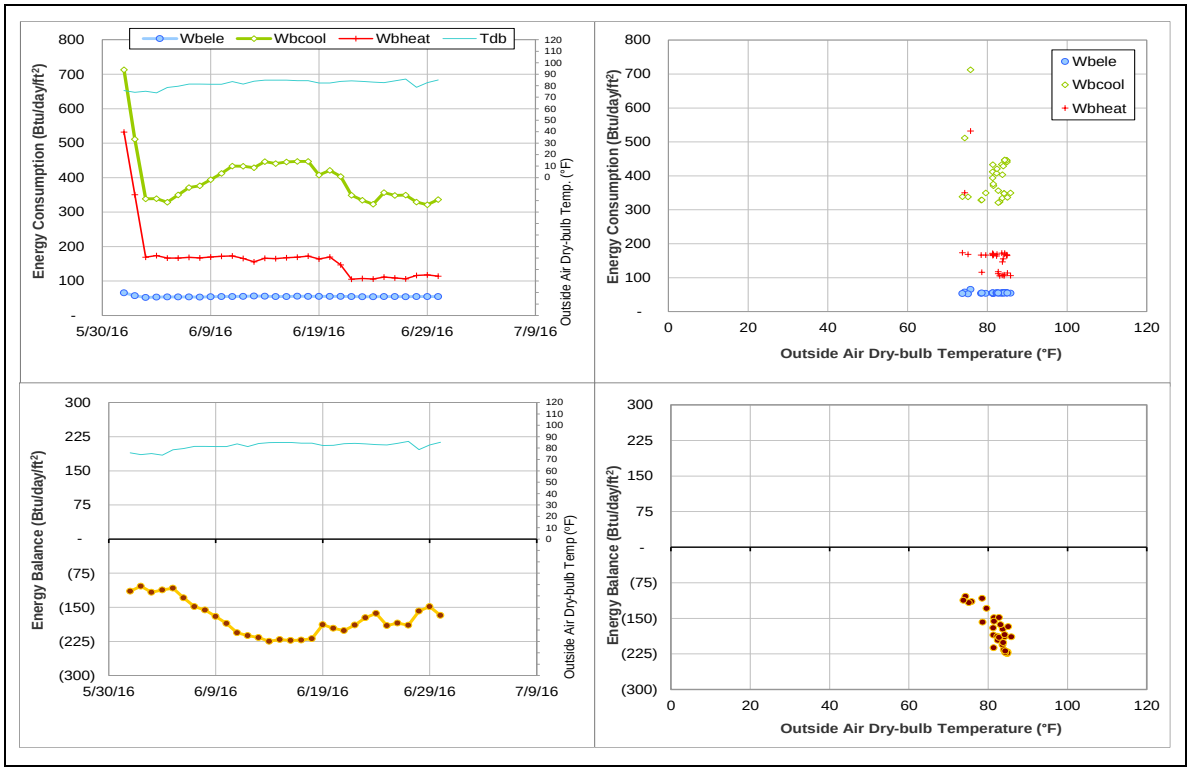
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during June 2016)



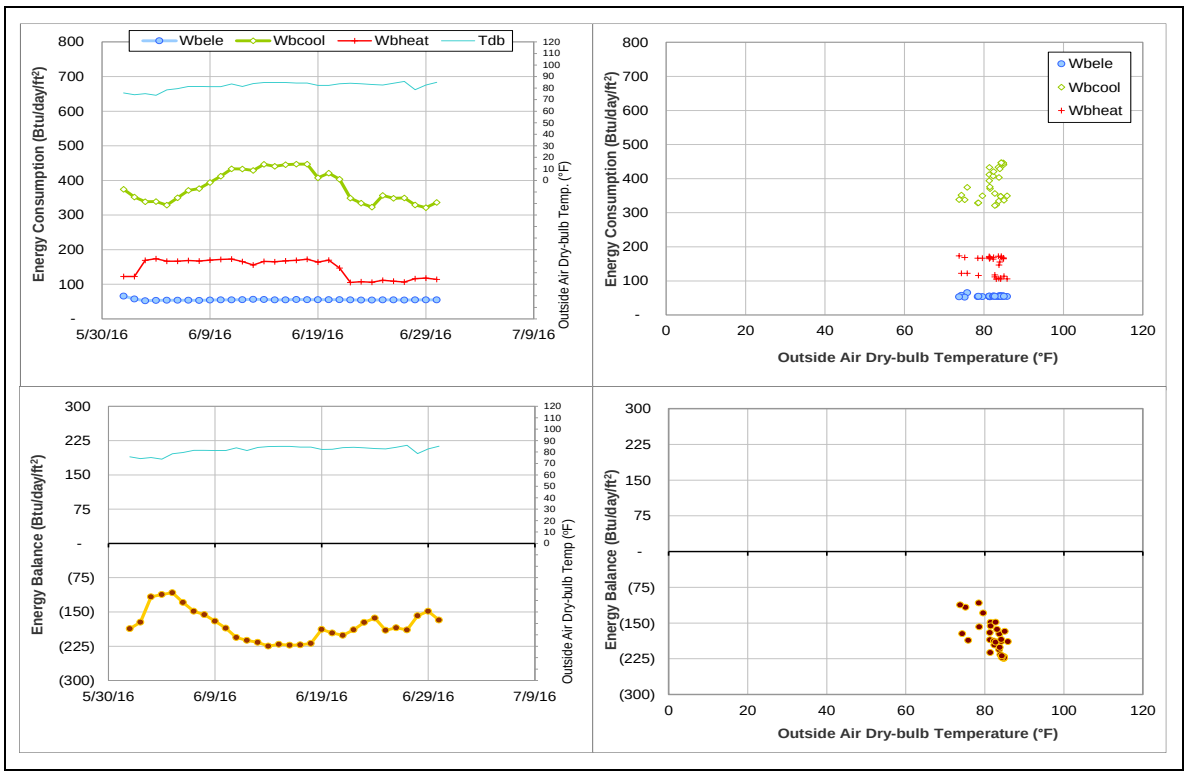
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during June 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Sanders Corps of Cadets Center (TAMU BLDG # 384)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002583	20	6/1/2016 – 6/20/2016	Model
HHW	002587	20	6/1/2016 – 6/20/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period.	4/30/2016 – 6/20/2016
HHW	The consumption dropped for a short period.	4/30/2016 – 6/20/2016

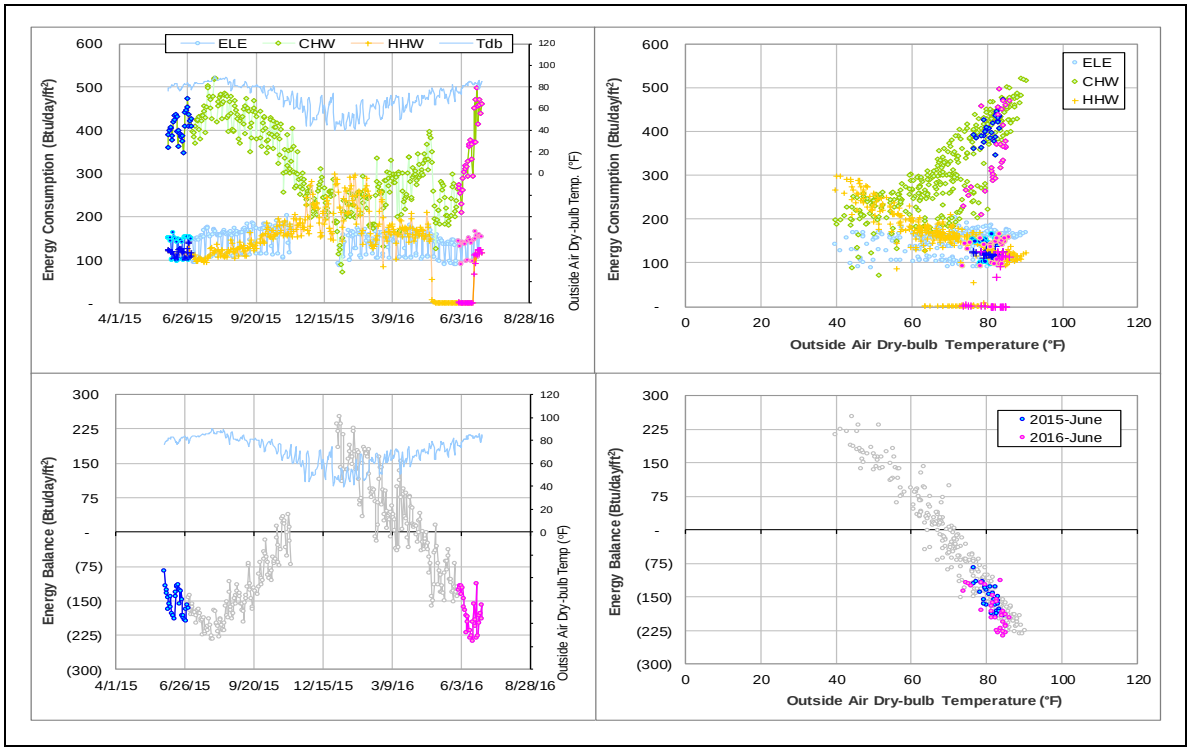
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002583	4/30/2016 – 6/20/2016	Flow Rate	Decreased
HHW	002587	4/30/2016 – 6/20/2016	Flow Rate and Delta T	Decreased to nearly zero

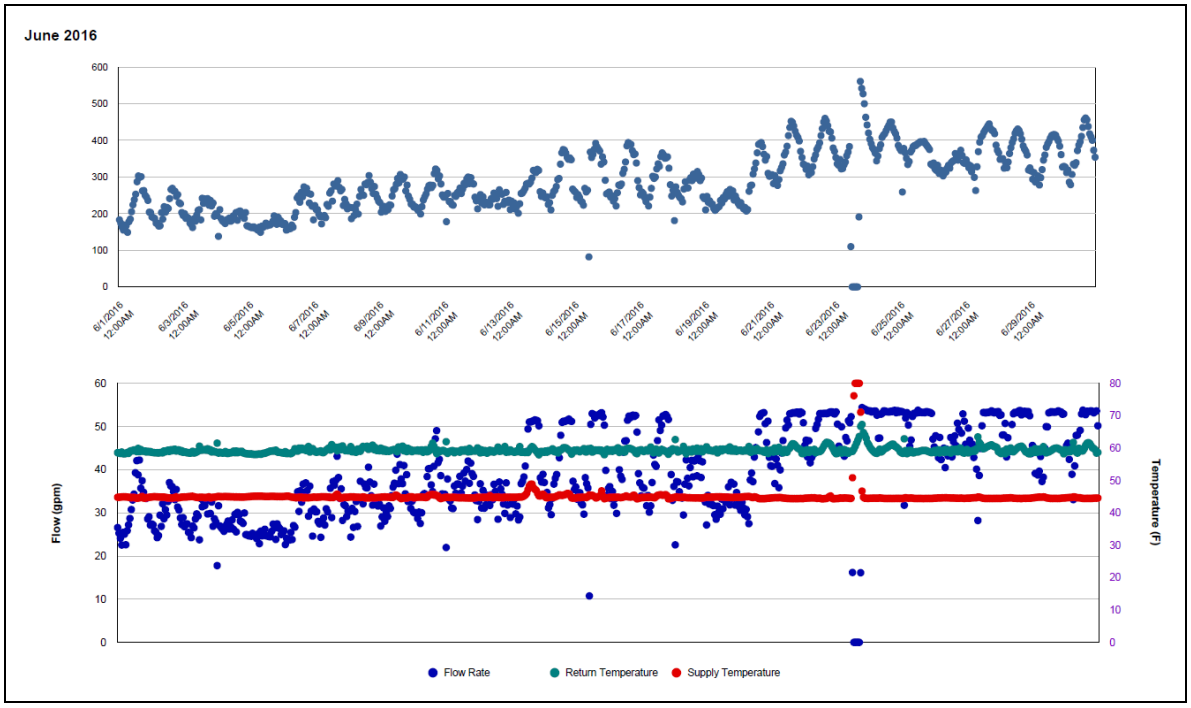
Quantitative descriptions and comments

The CHW consumption suddenly decreased about 100 Btu/day/ft^2 since 4/30/2016, due to the decrease of the flow rate. Around the same time, the HHW consumption decreased to nearly zero, as the flow rate and delta T both decreased to nearly zero. The CHW and HHW consumption increased back to the previous consumption levels after 6/20/2016. However, the energy balance didn't change much all the time, with the cross point temperature between 65°F-70°F. The consumption was estimated by models.

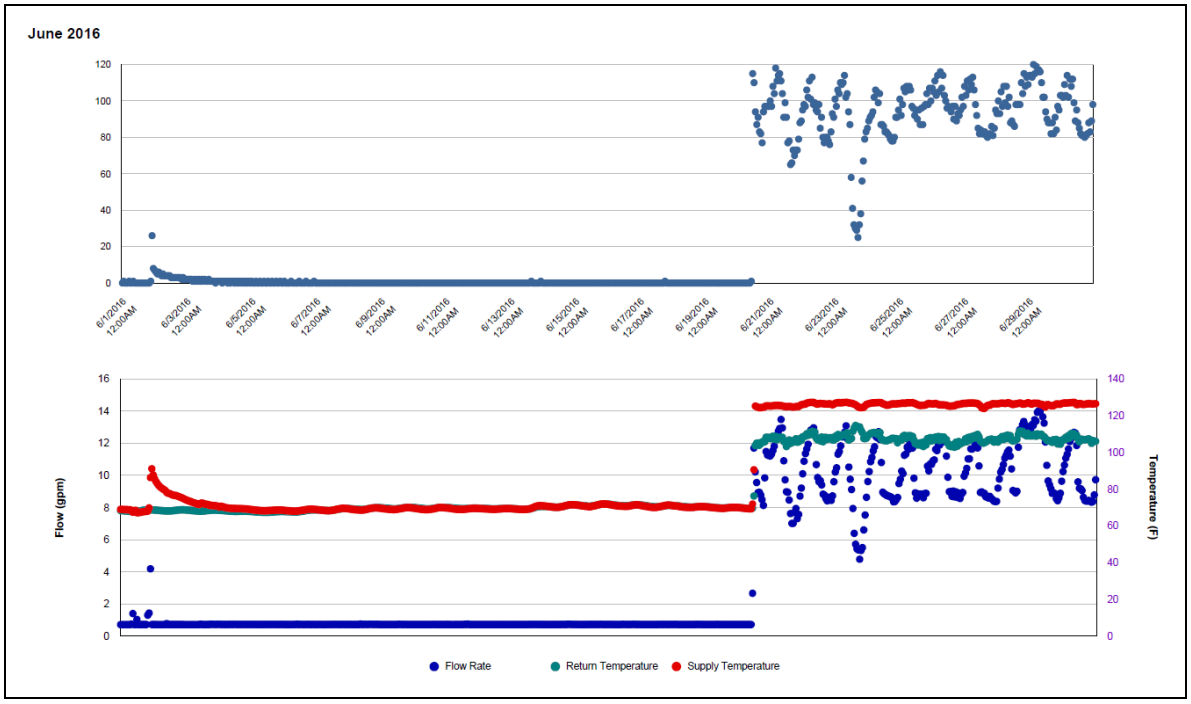
Explanatory Figure: 13 months energy balance plot with original data



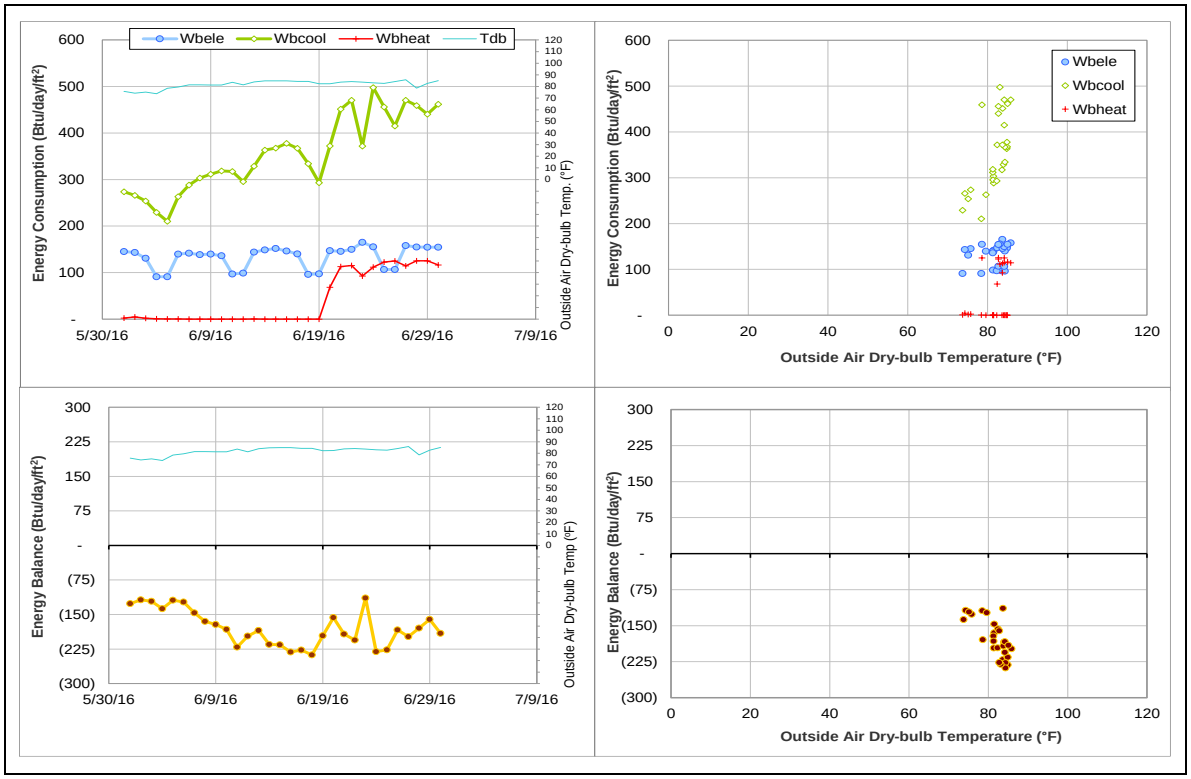
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during June 2016)



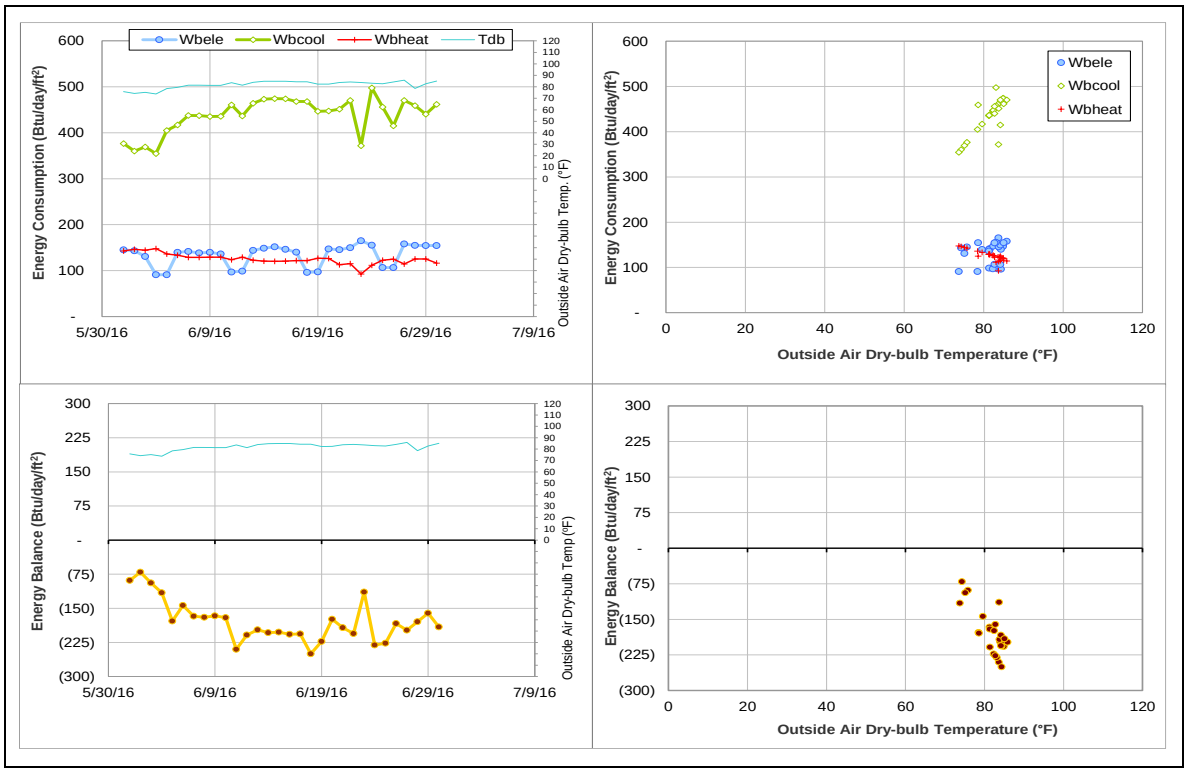
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during June 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Spence Hall Dorm 1 (TAMU Bldg# 400)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	009170	15	6/16/2016 – 6/30/2016	Average
HHW	009171	15	6/16/2016 – 6/30/2016	Average

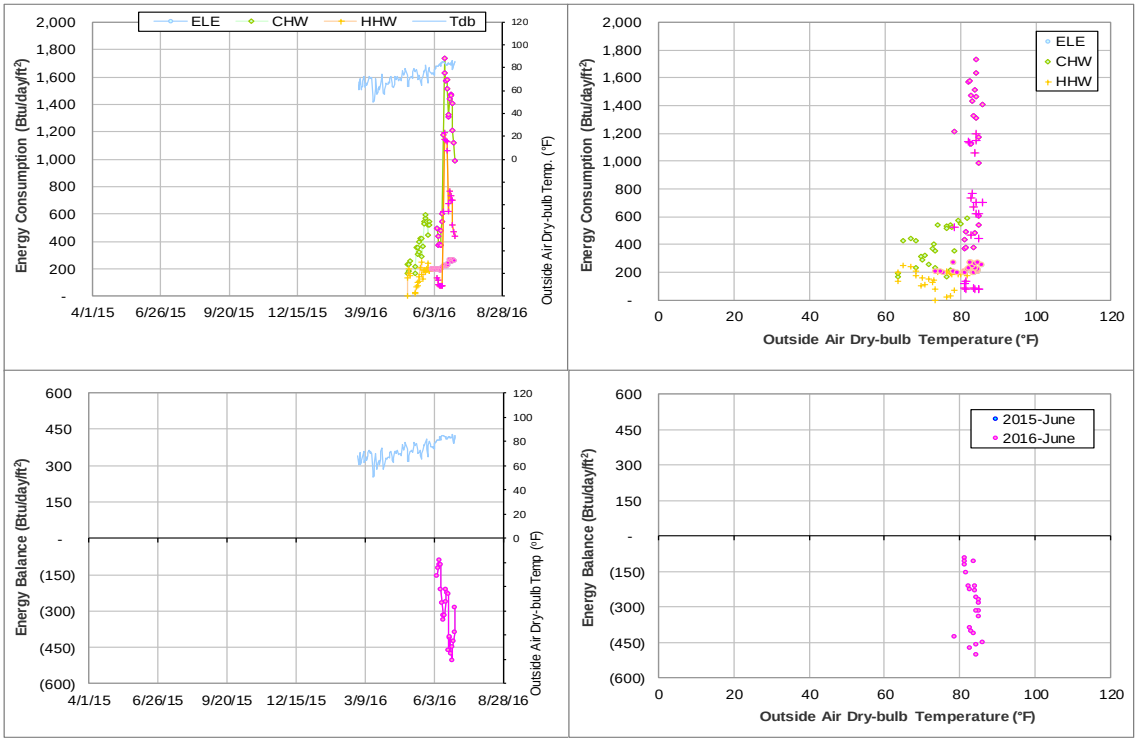
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level has increased suddenly.	6/16/2016 – ongoing
HHW	The consumption level has increased suddenly.	6/16/2016 – ongoing

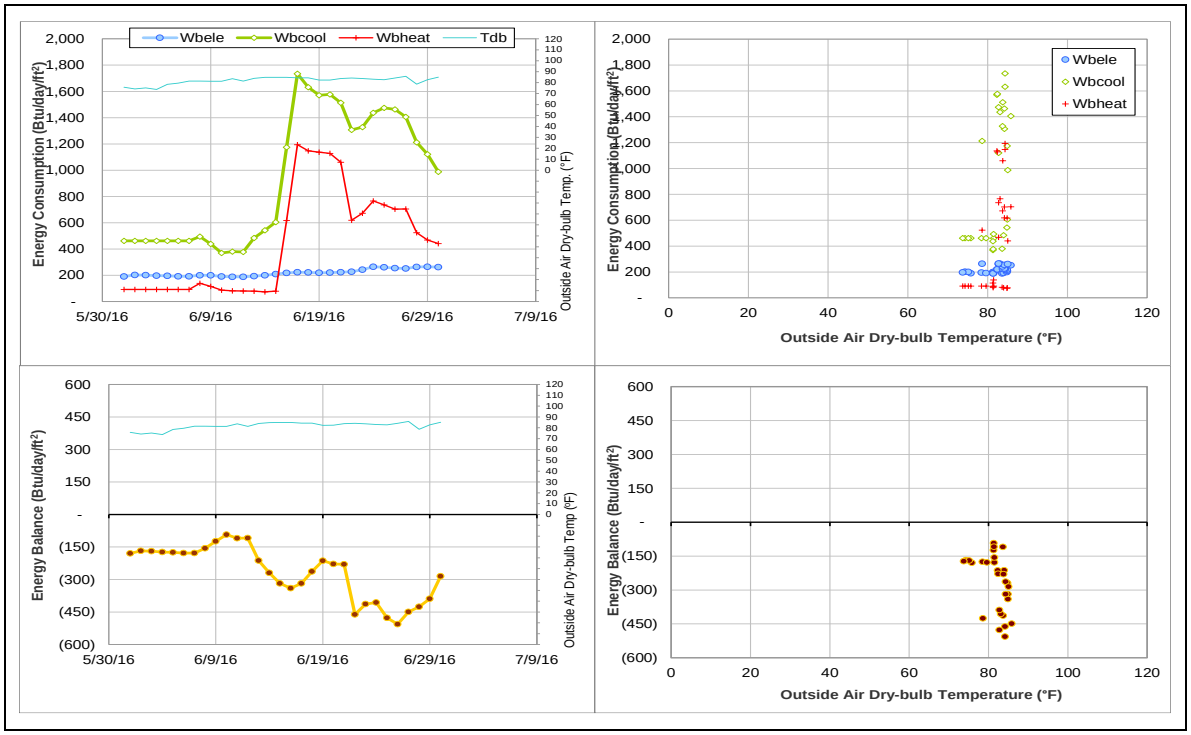
Quantitative descriptions and comments

The CHW and HHW consumption suddenly increased to very high consumption levels since 6/16/2016. The CHW was around 1000-1800 Btu/day/ft^2, and the HHW was between 400-1200 Btu/day/ft^2. There was no meter readings available to check. The consumption was estimated by the average of the rest days during this month.

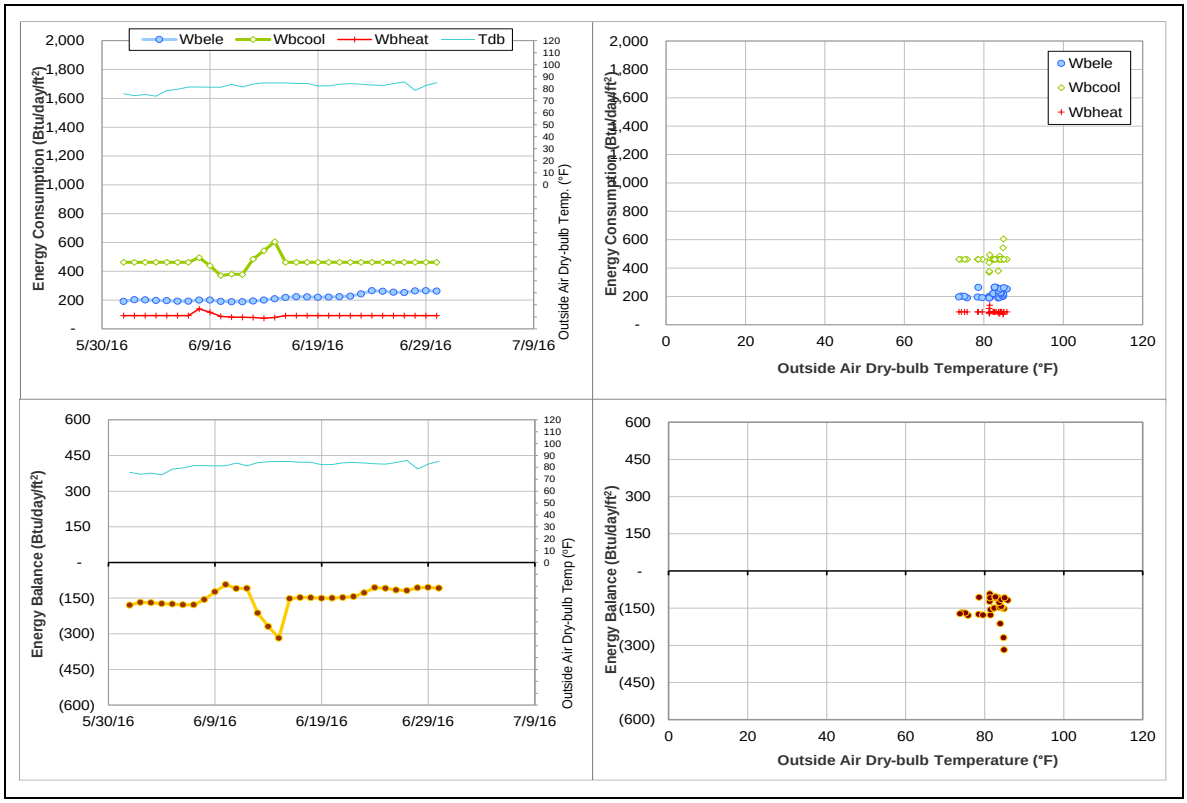
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Commons Hall (TAMU Bldg #440)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	009237	1	6/6/2016	Linear Interpolation
HHW	009238	1	6/6/2016	Linear Interpolation

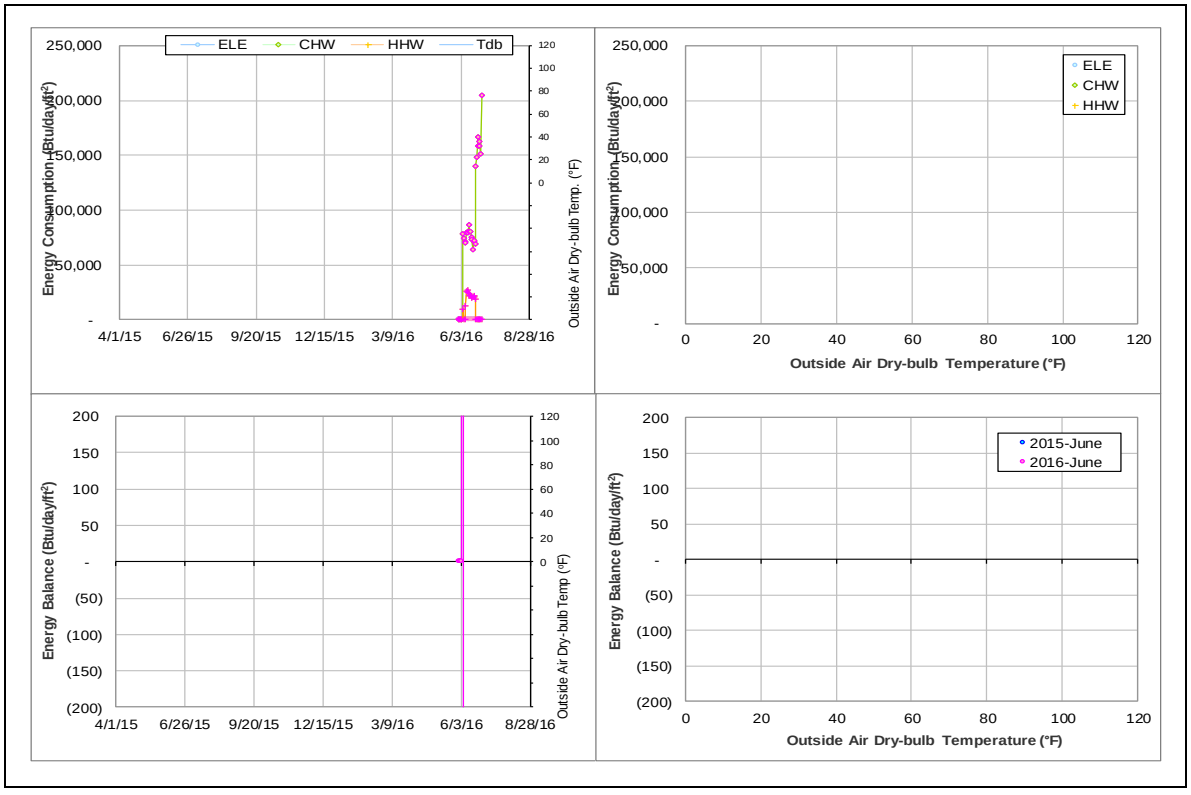
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	6/6/2016
HHW	The metered values appear to be faulty.	6/6/2016

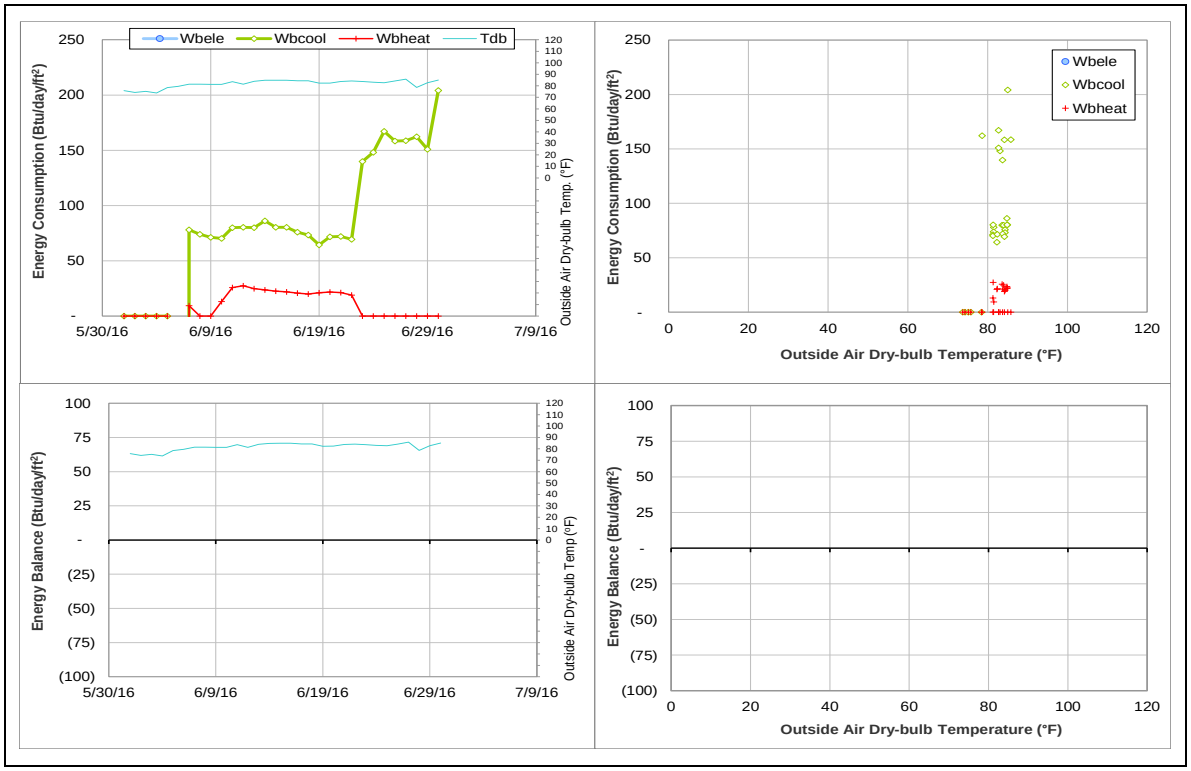
Quantitative descriptions and comments

CHW meter #009237 and HHW meter #009238 are newly added in this month. Both the CHW and HHW consumption values on 6/6/2016 were negative, but there was no meter readings available to check. The consumption was estimated by linear interpolation.

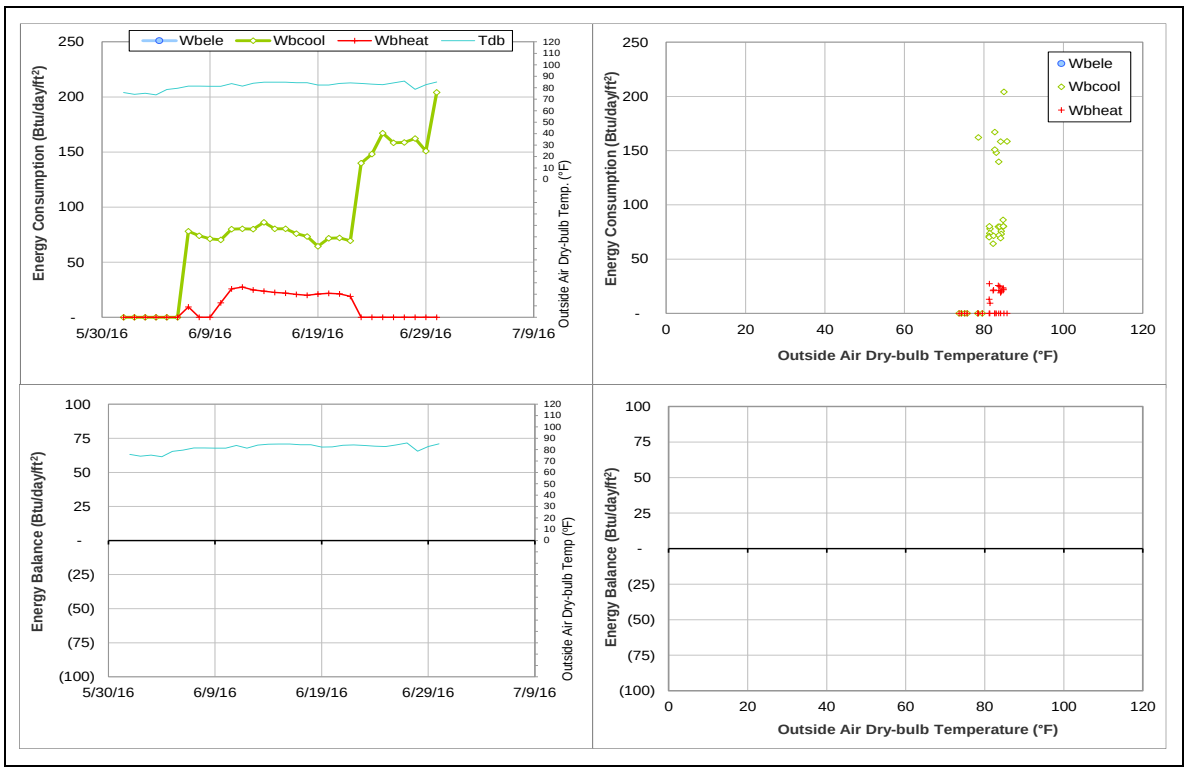
Explanatory Figure: 13 months energy balance plot with original data.



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Krueger Residence Hall (TAMU Bldg #441)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002504	5	6/1/2016 – 6/5/2016	Model
HHW	002500	5	6/1/2016 – 6/5/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level has decreased suddenly.	5/16/2016 – ongoing
HHW	The consumption level has decreased suddenly.	5/16/2016 – ongoing

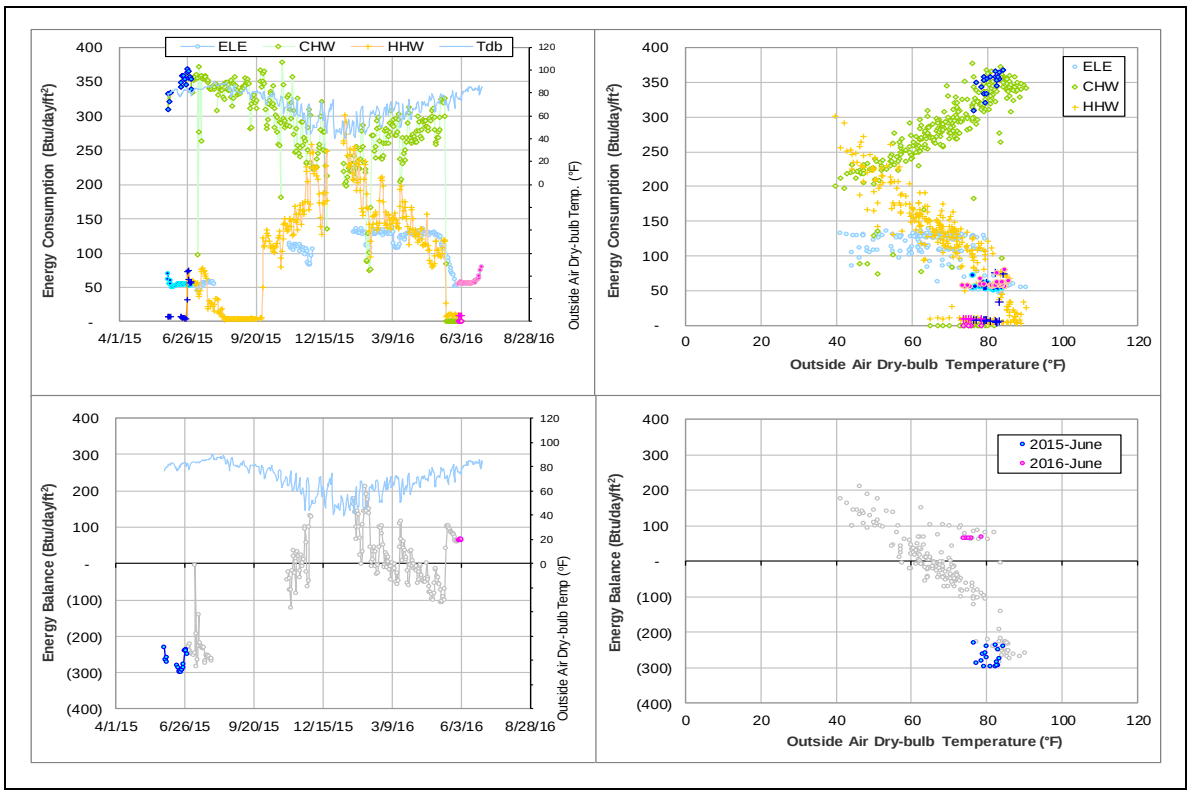
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002504	5/16/2016 – ongoing	Flow rate	Nearly zero, Faulty
HHW	002500	5/16/2016 – ongoing	Flow rate	Nearly zero, Faulty

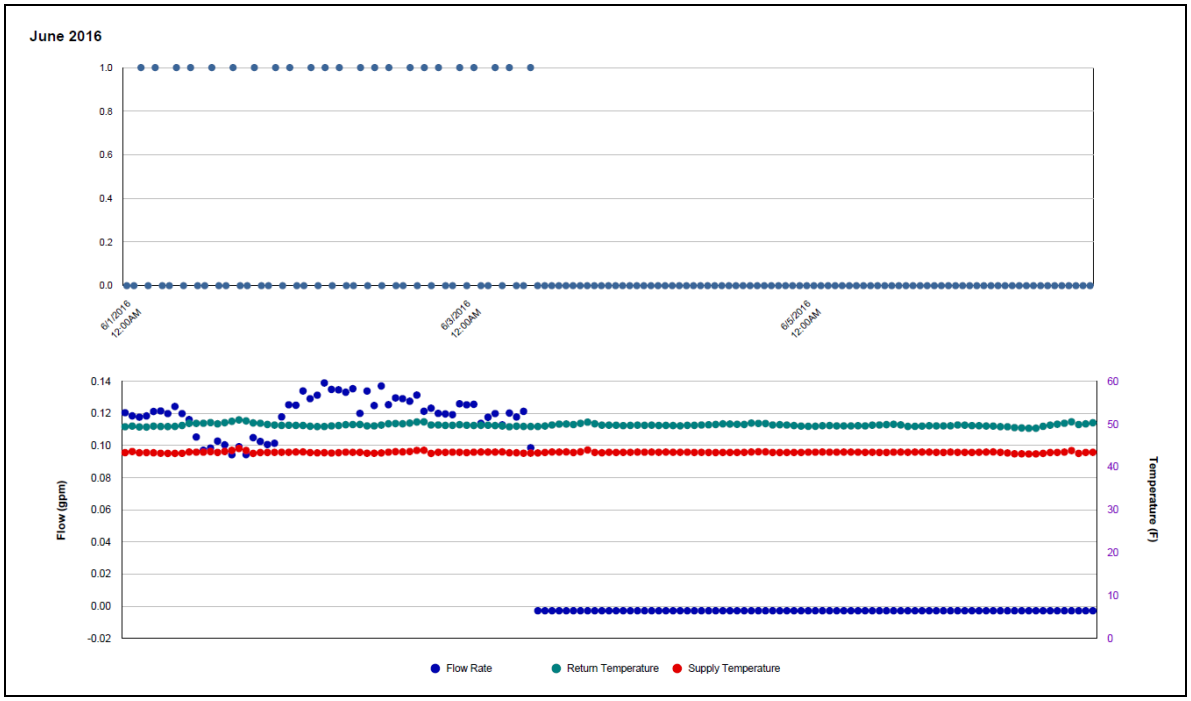
Quantitative descriptions and comments

Both the CHW and HHW consumption decreased to nearly zero during 5/16/2016-ongoing, as the CHW/HHW flow rate decreased to nearly zero. The consumption was estimated by models.

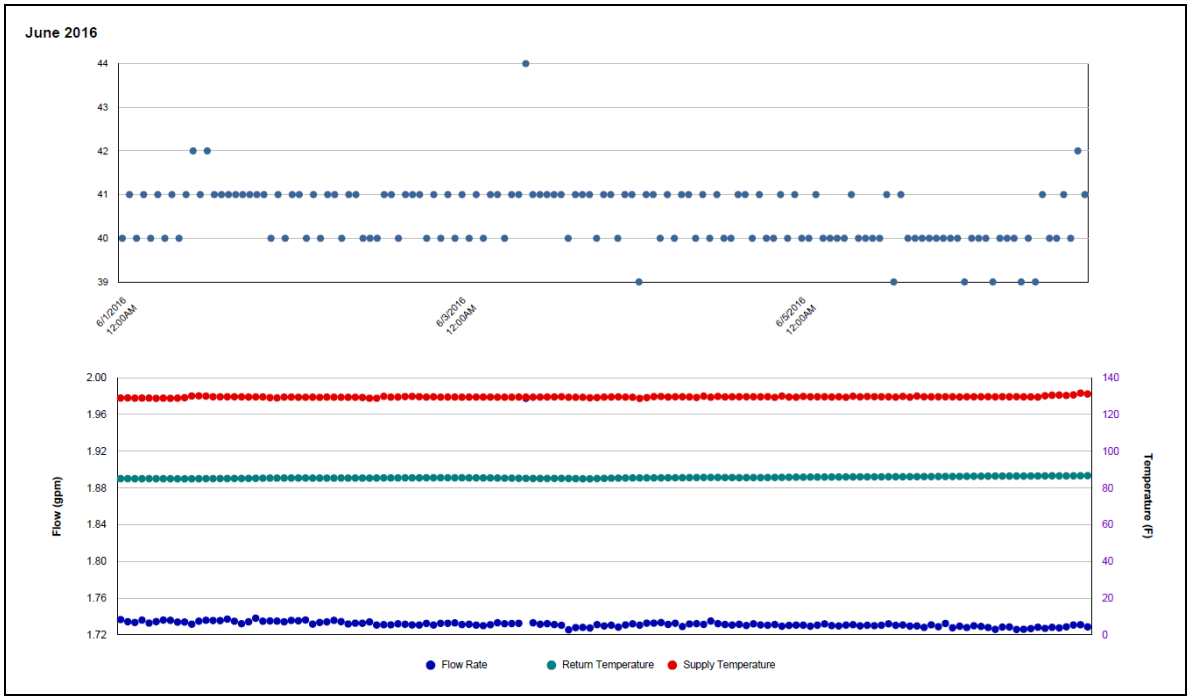
Explanatory Figure: 13 months energy balance plot with original data.



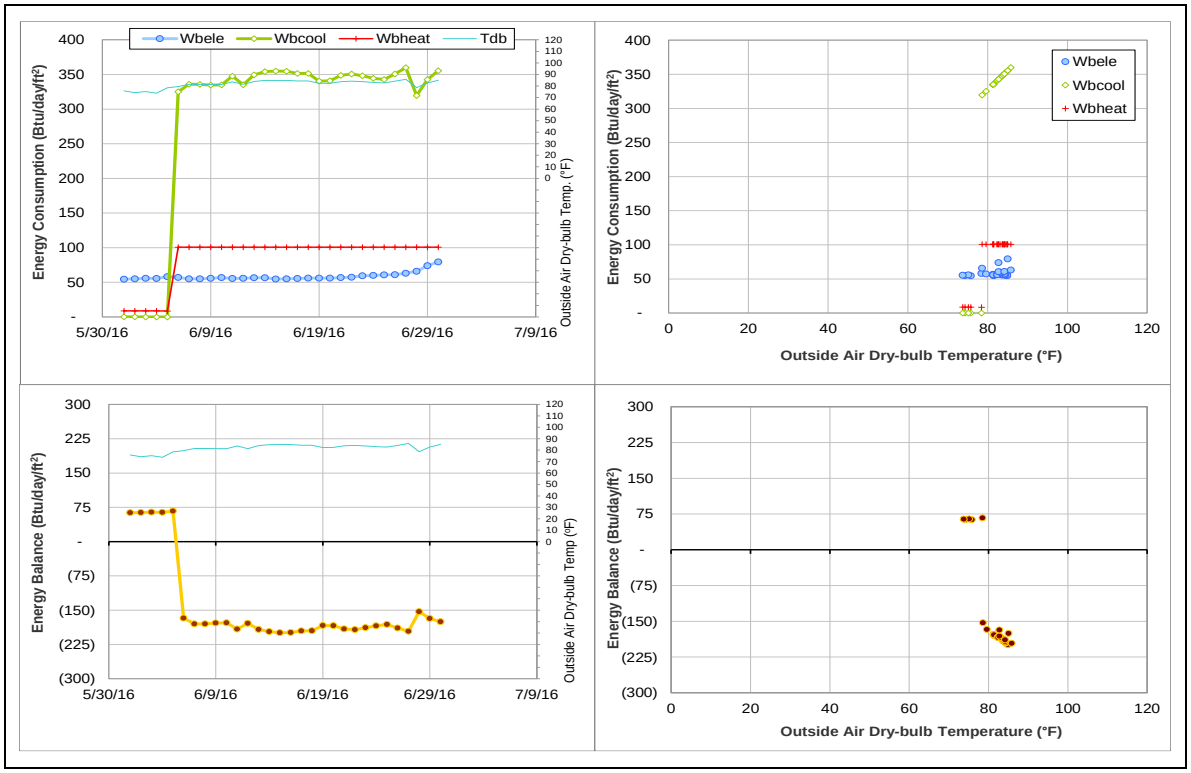
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during June 2016)



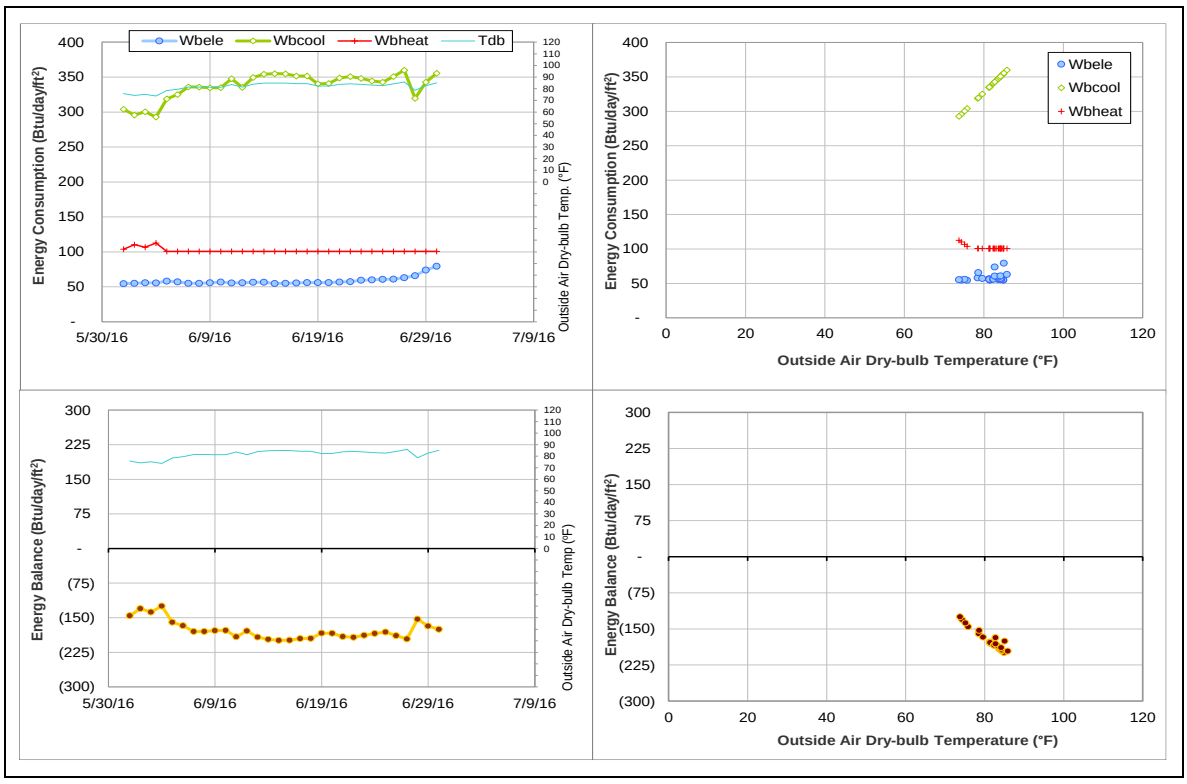
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during June 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Evans Library (TAMU Bldg #468)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003895	13	6/1/2016 – 6/13/2016	Average
HHW	003899	13	6/1/2016 – 6/13/2016	Average

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level has increased suddenly. The metered value appeared to be faulty.	5/18/2016 – 6/13/2016
HHW	The consumption level has decreased suddenly. The metered value appeared to be faulty.	5/18/2016 – 6/13/2016

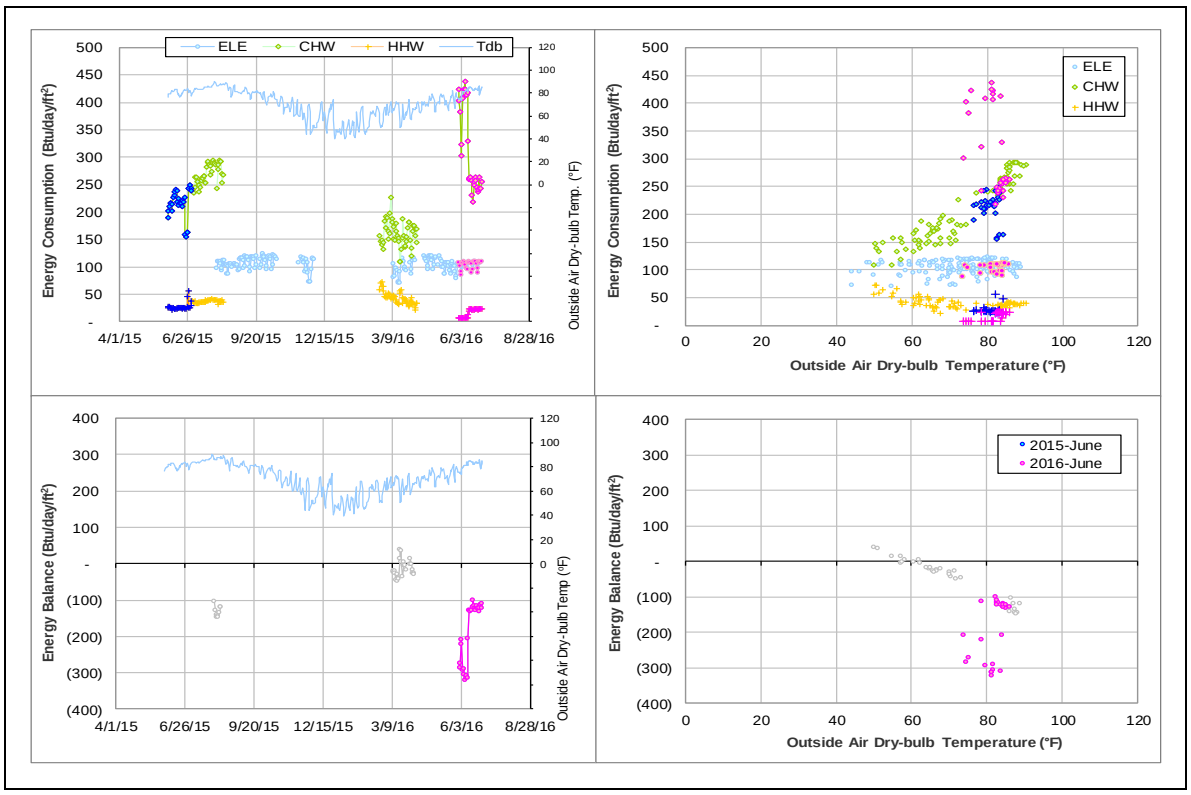
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	003895	5/18/2016 – 6/13/2016	Supply Temperature	Zero, Faulty
HHW	003899	5/18/2016 – 6/13/2016	Return Temperature	Increased

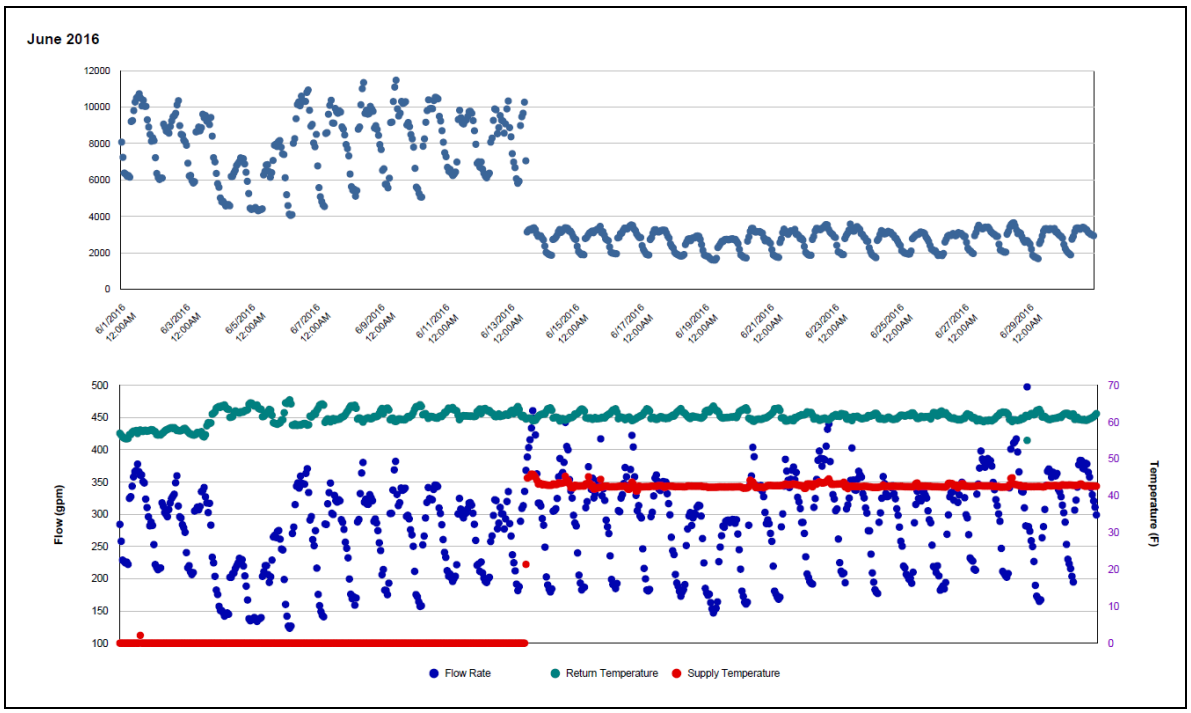
Quantitative descriptions and comments

The CHW (Meter ID: 003895) consumption suddenly increased 200 Btu/day/ft^2 during 5/18/2016-6/13/2016, as the supply temperature decreased to zero. The HHW (Meter ID: 003899) consumption decreased to zero during 5/18/2016-6/13/2016, as the HHW return temperature increased to be higher than the supply temperature. The consumption was estimated by the average of the rest days during this month.

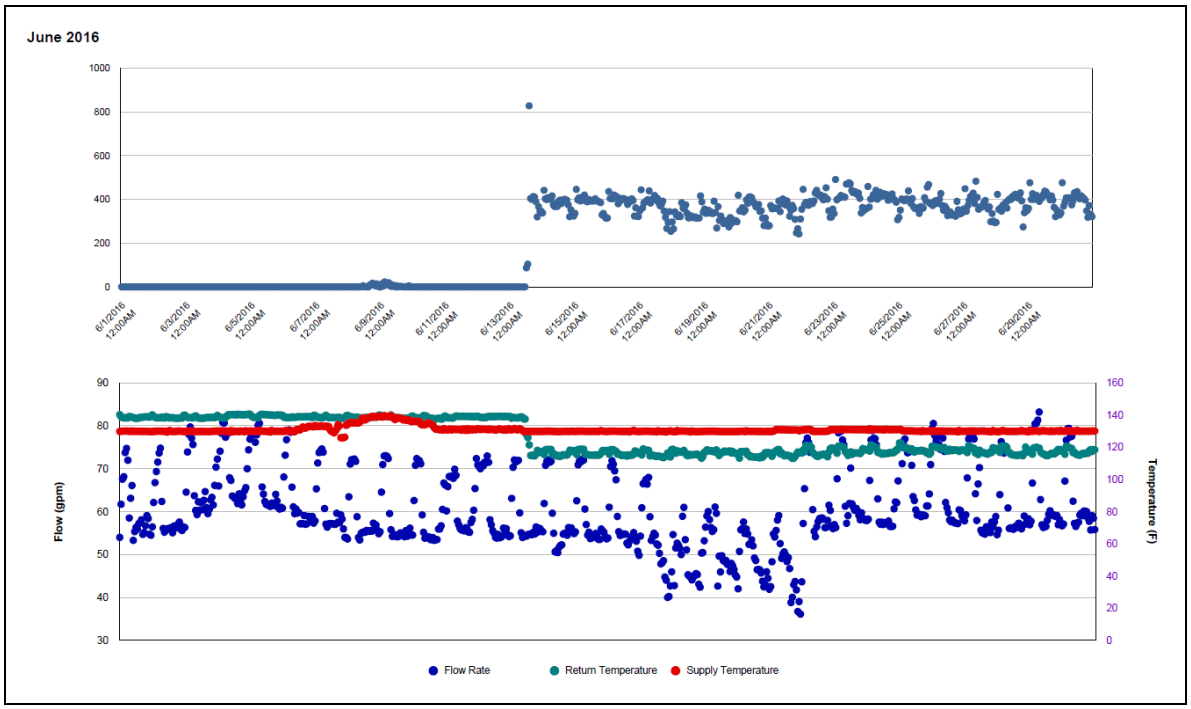
Explanatory Figure: 13 months energy balance plot with original data.



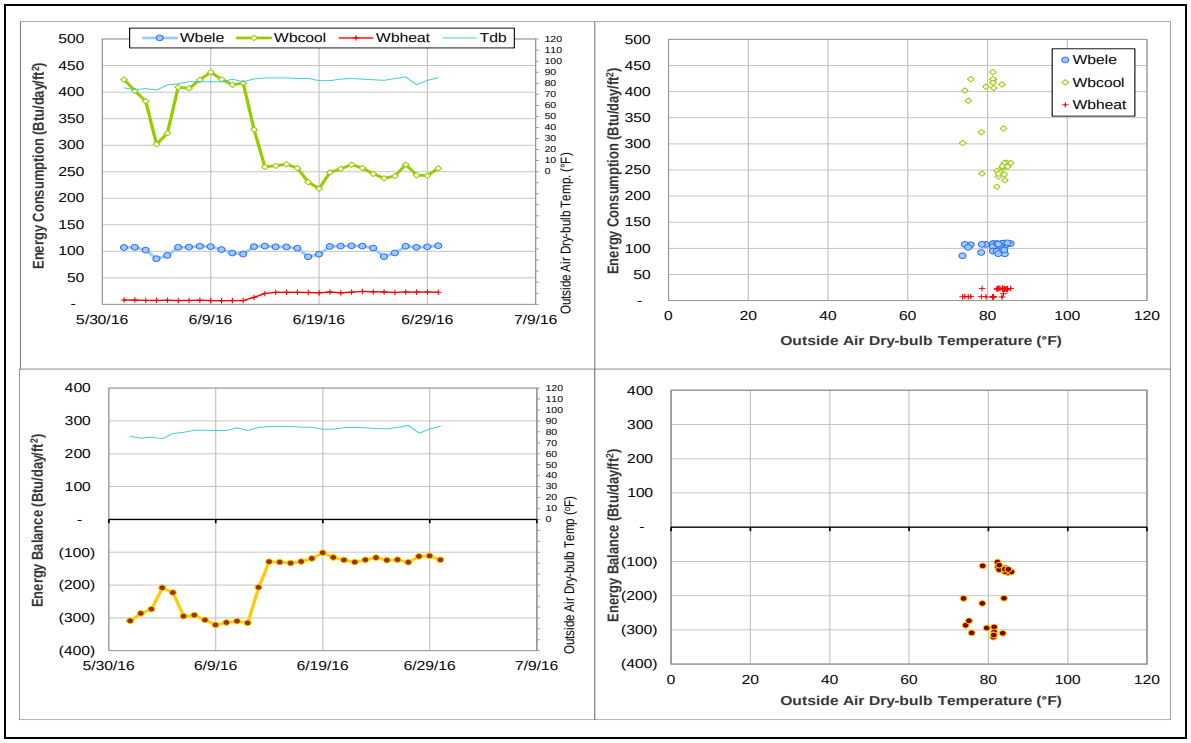
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW meter 003895 during June 2016)



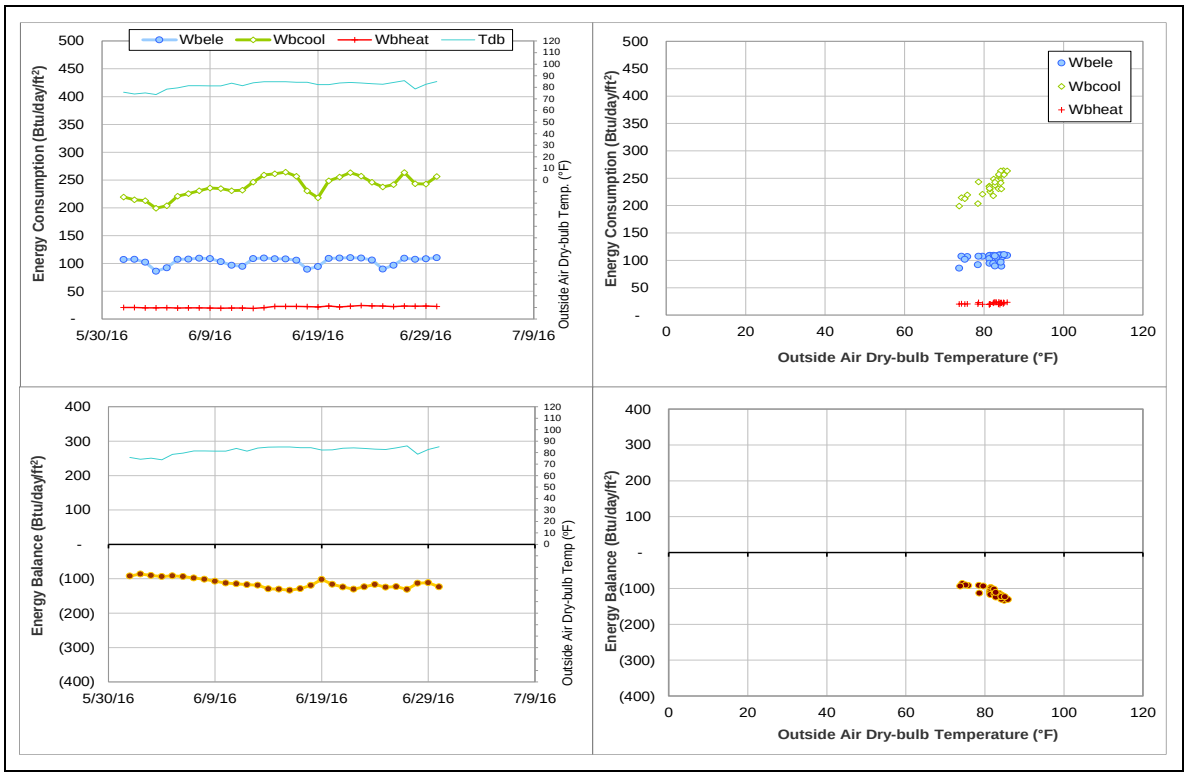
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW meter 003899 during June 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Chemistry Building (TAMU Bldg #484)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	007032	30	6/1/2016 – 6/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW (007032)	The recorded consumption was zero and it seemed to be faulty.	5/17/2016 – ongoing

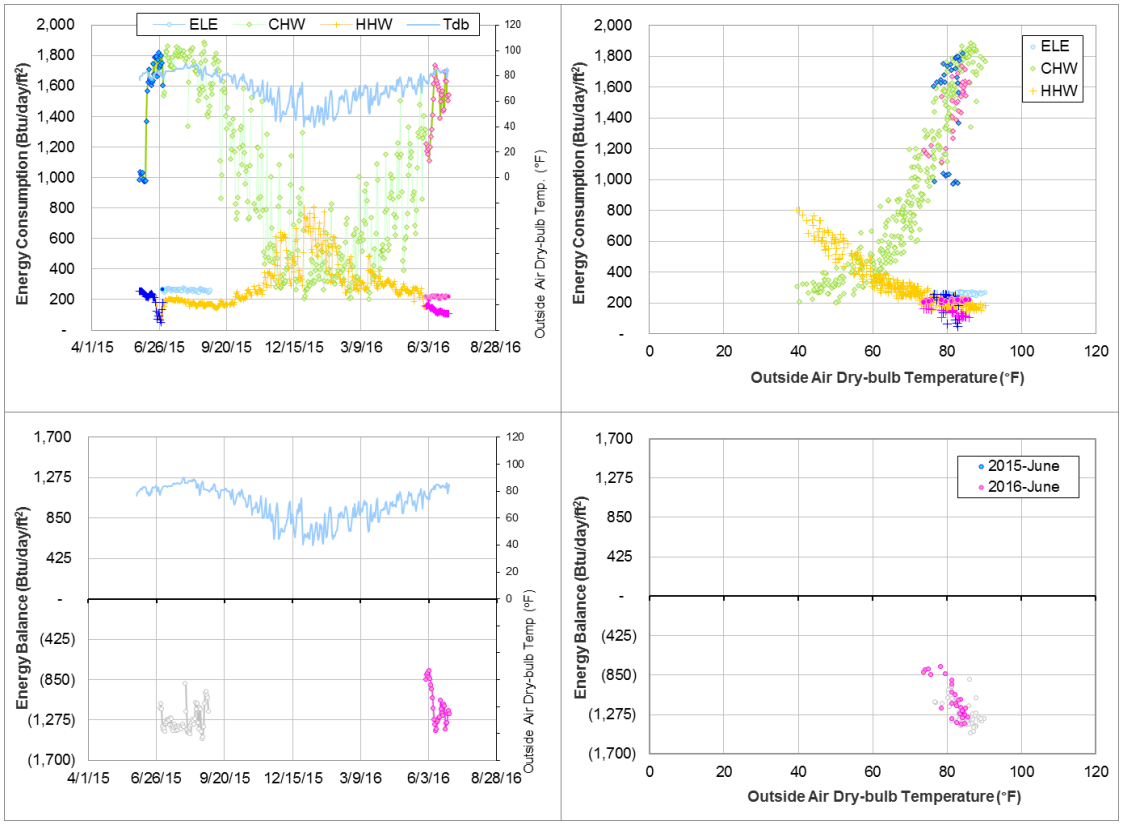
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	007032	5/17/2016 – ongoing	Return Temperature	Increased

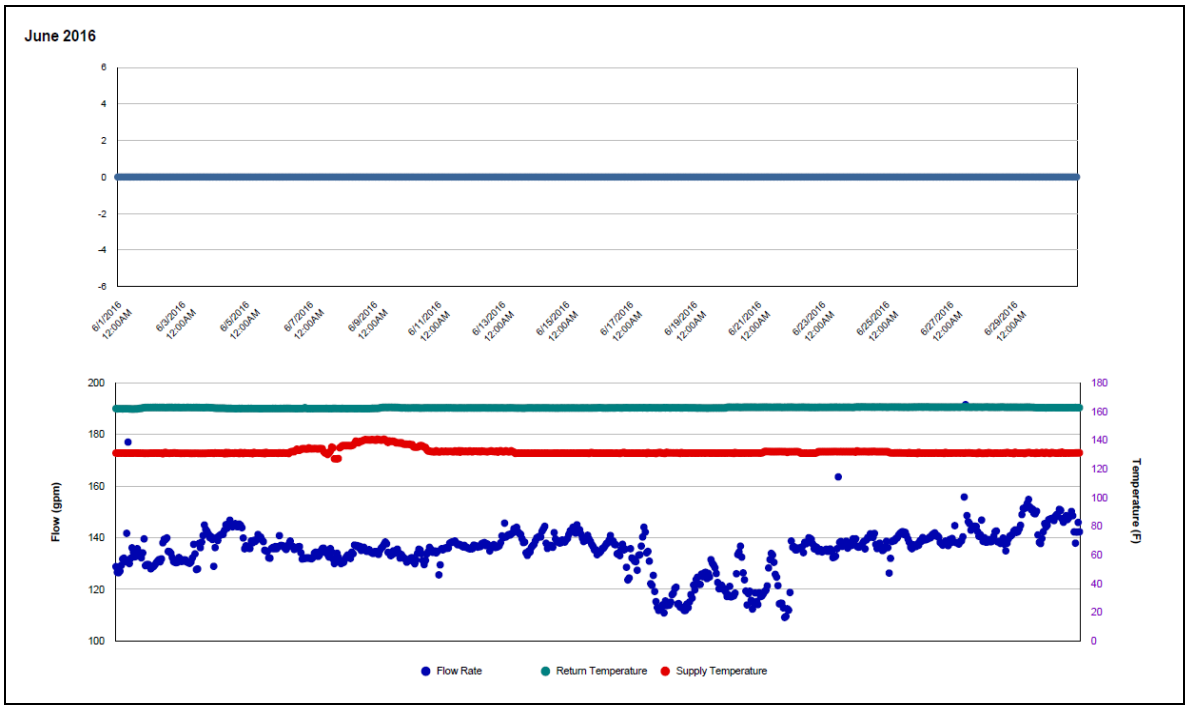
Quantitative descriptions and comments

There are two HHW meters for this building. Starting in May 2016, the return temperature for one of HHW meters (Meter ID 007032) sometimes increased from around 120°F to 160°F creating a negative delta T. The consumption for entire month was estimated by a model.

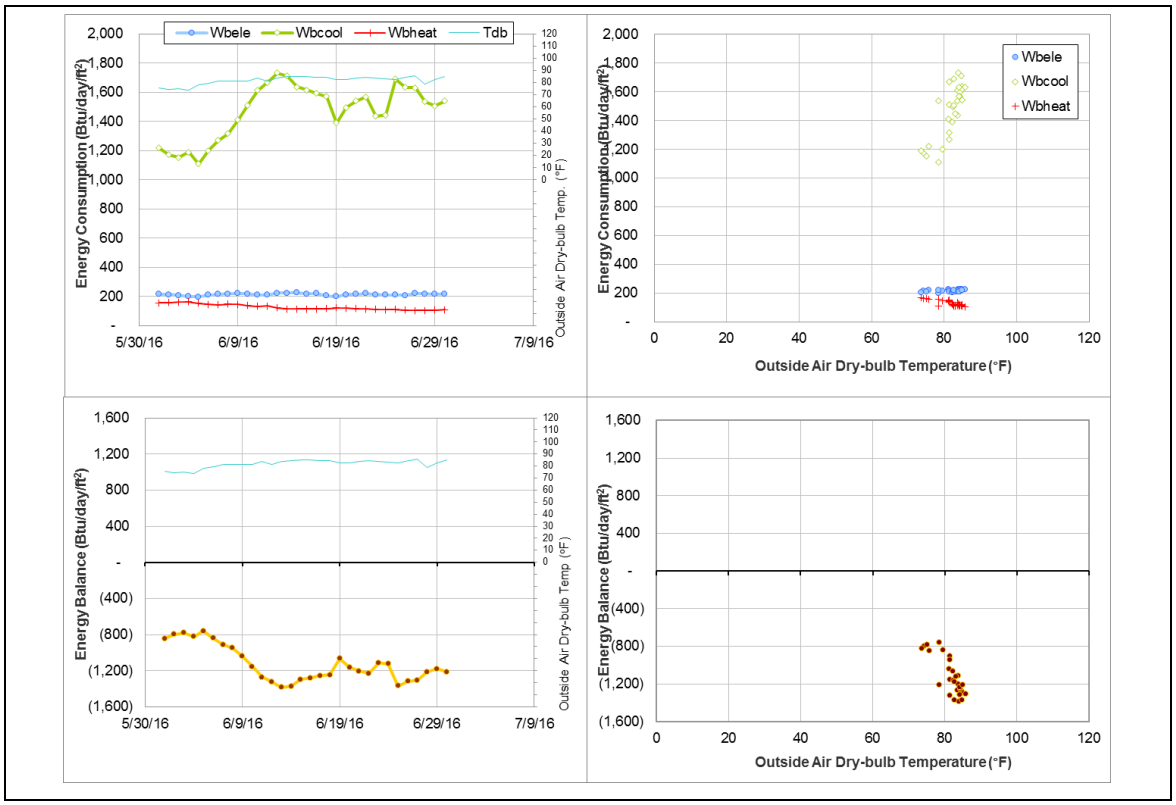
Explanatory Figure: 13 months energy balance plot with original data.



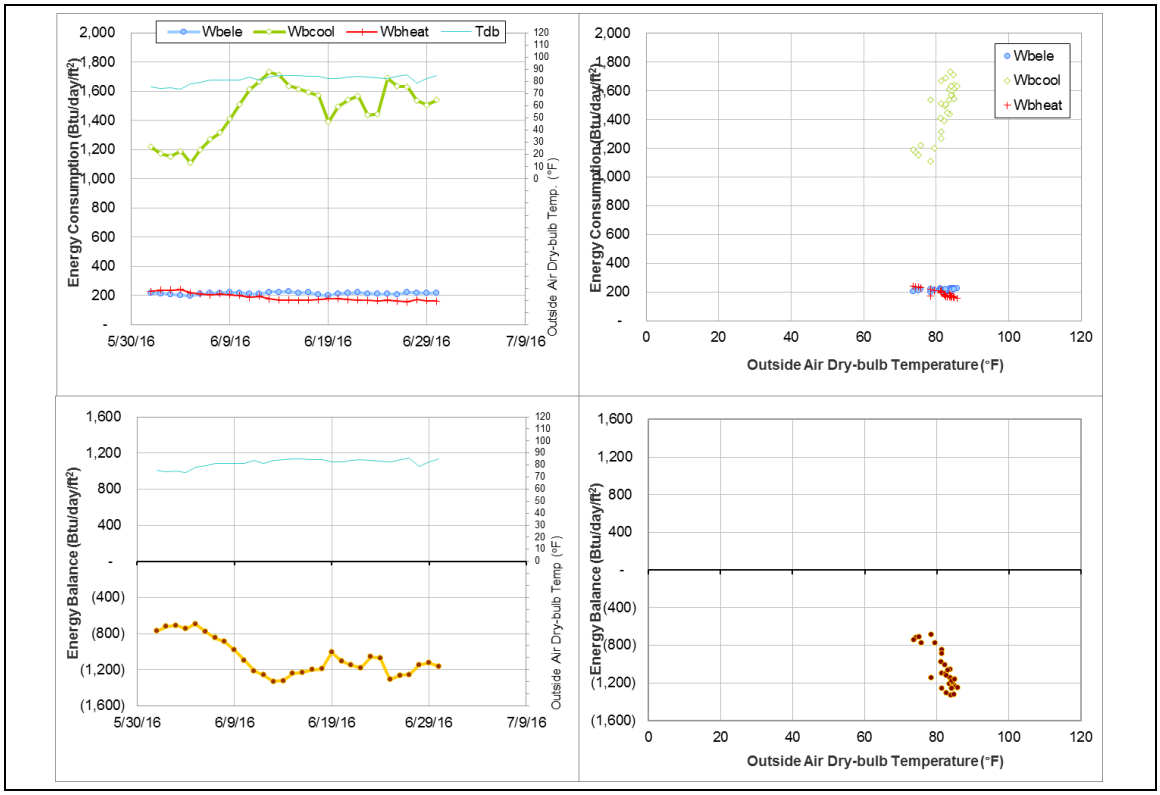
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. (Meter #007032, June 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Beutel Health Center (TAMU Bldg # 520)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003933	30	6/1/2016 – 6/30/2016	Model
HHW	003944	30	6/1/2016 – 6/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level decreased.	8/22/2015-ongoing
HHW	The consumption level decreased.	8/22/2015-ongoing

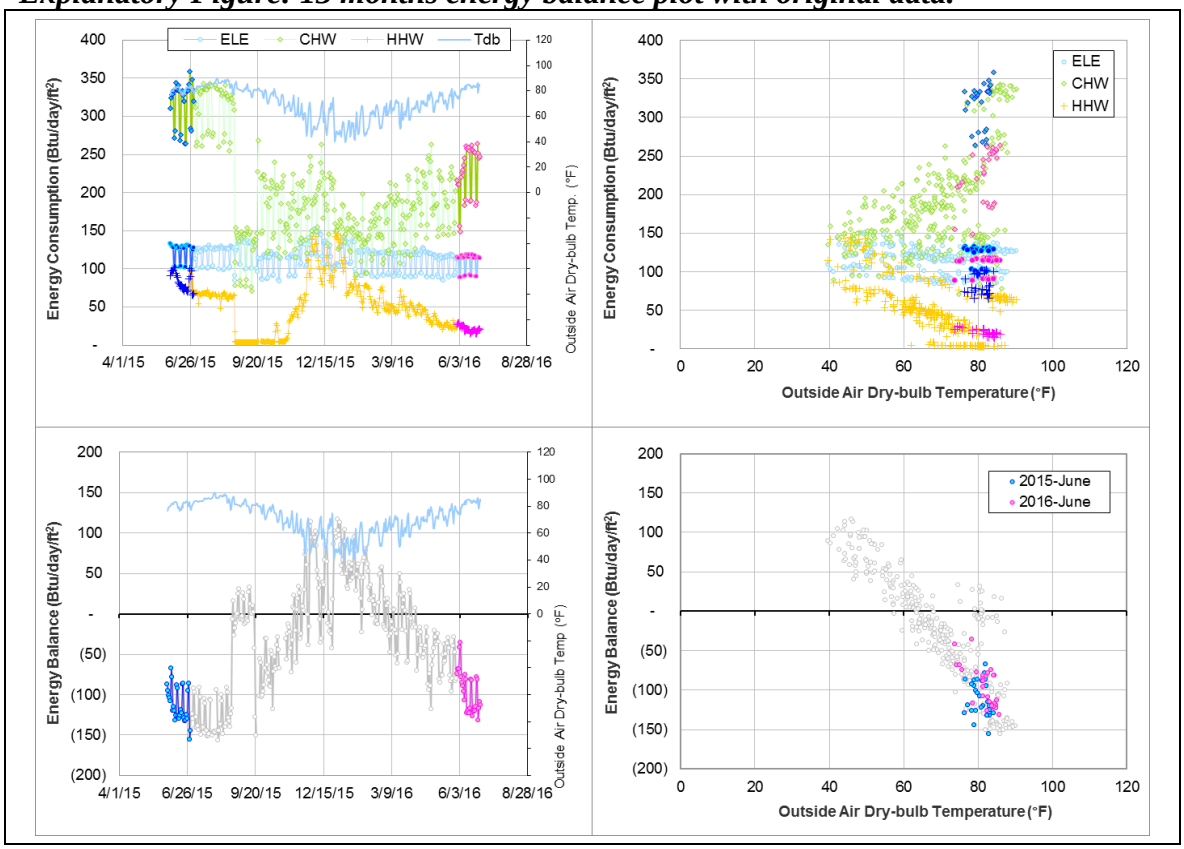
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	003933	8/22/2015 – 9/19/2015	Flow Rate	Decreased
		8/22/2015 - ongoing	Delta-T	Decreased
HHW	003944	8/22/2015 - ongoing	Delta-T	Decreased and small

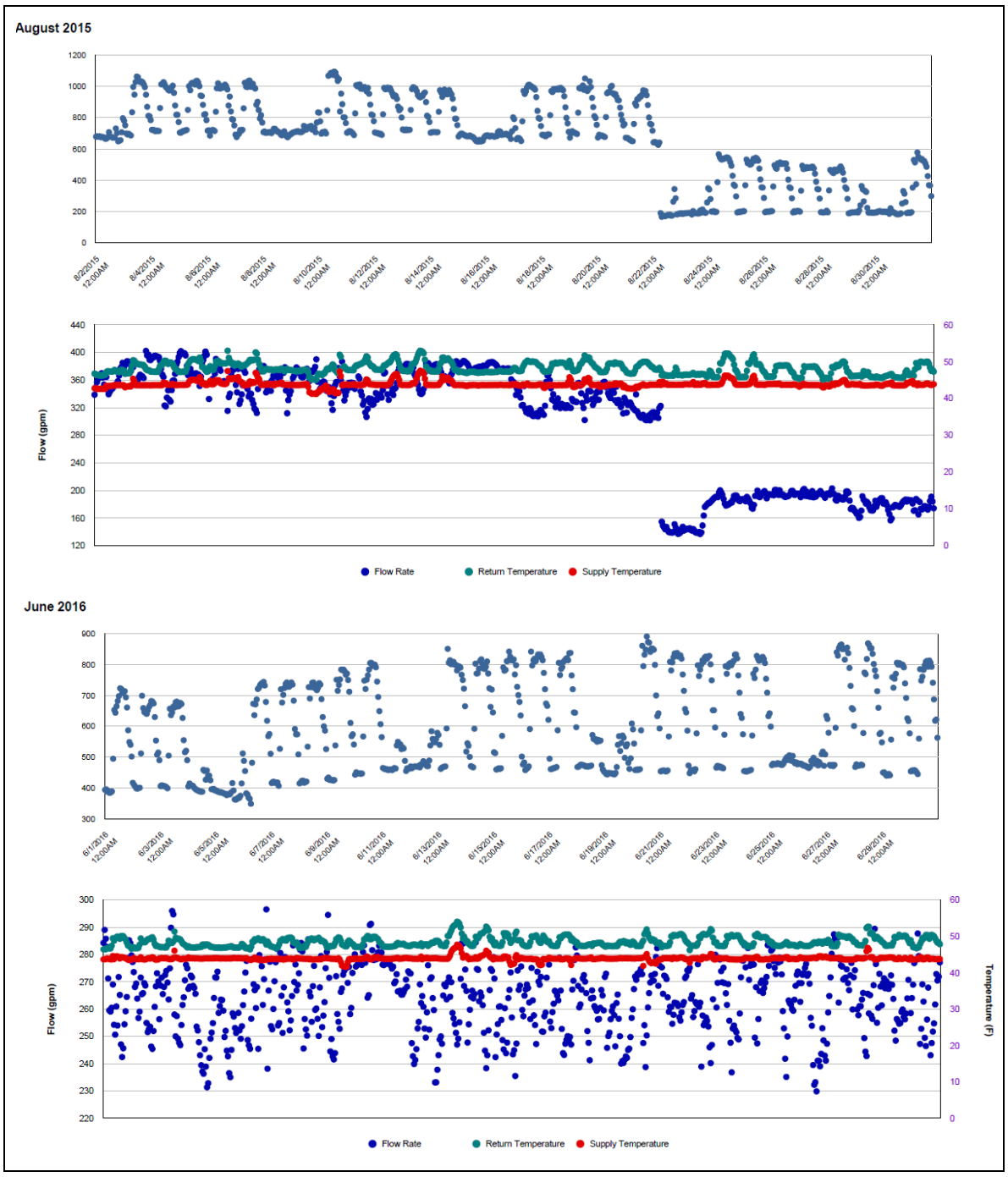
Quantitative descriptions and comments

The return temperature for HHW meter increased and the delta-T decreased since 8/22/2015. At the same time, the flow rate decreased around 50%. As a result, the HHW consumption decreased largely (~80%). The CHW consumption also decreased by approximately 50% after 8/22/2015 caused by a decrease in flow rate. The flow rate increased back on 9/19/2015, but the consumption level for current month is 100 Btu/day/ft^2 lower than that before 8/22/2015. The consumption was estimated by models based on the data during 8/1/2014 - 7/31/2015. We would like to know if this building has been renovated recently.

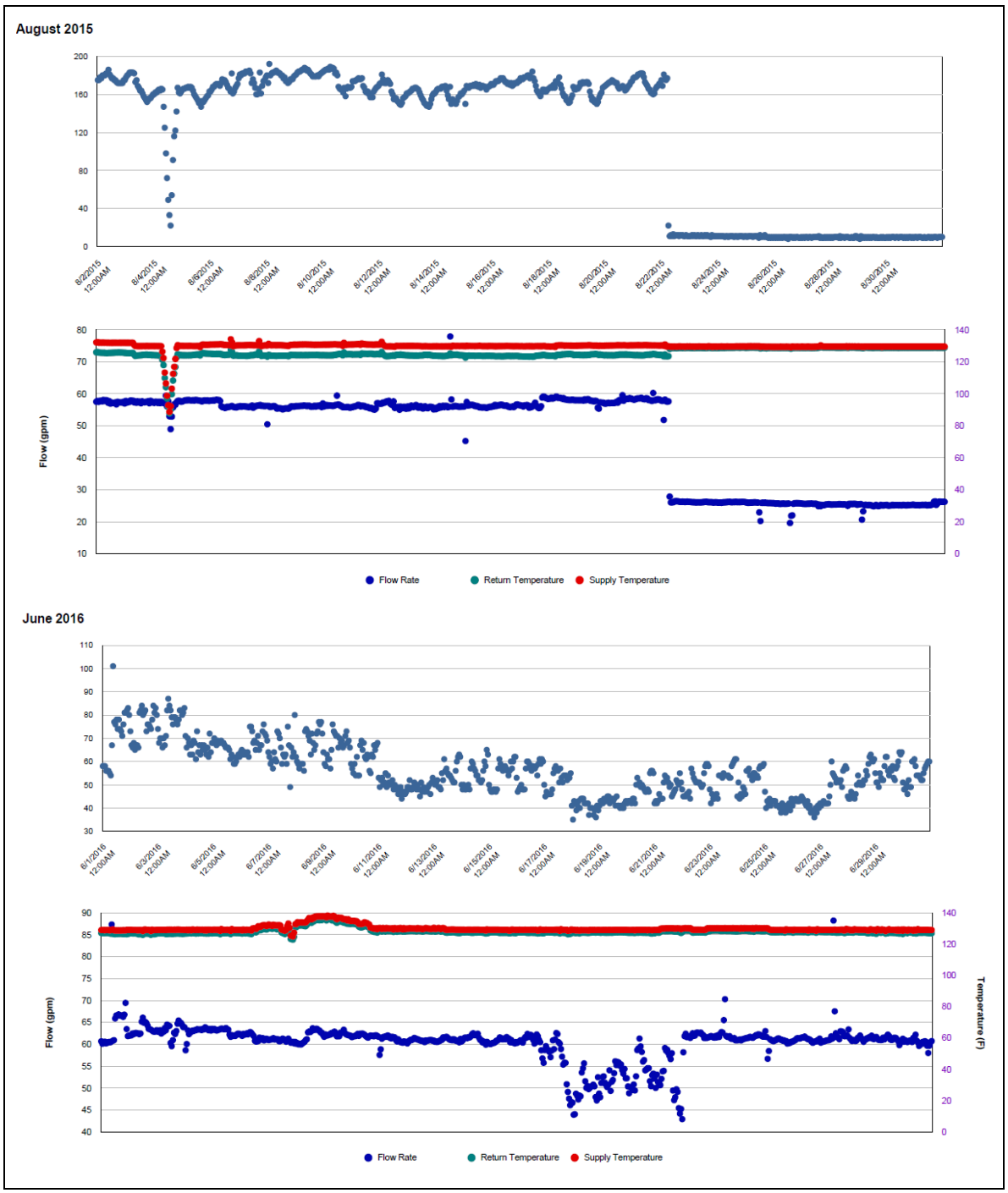
Explanatory Figure: 13 months energy balance plot with original data.



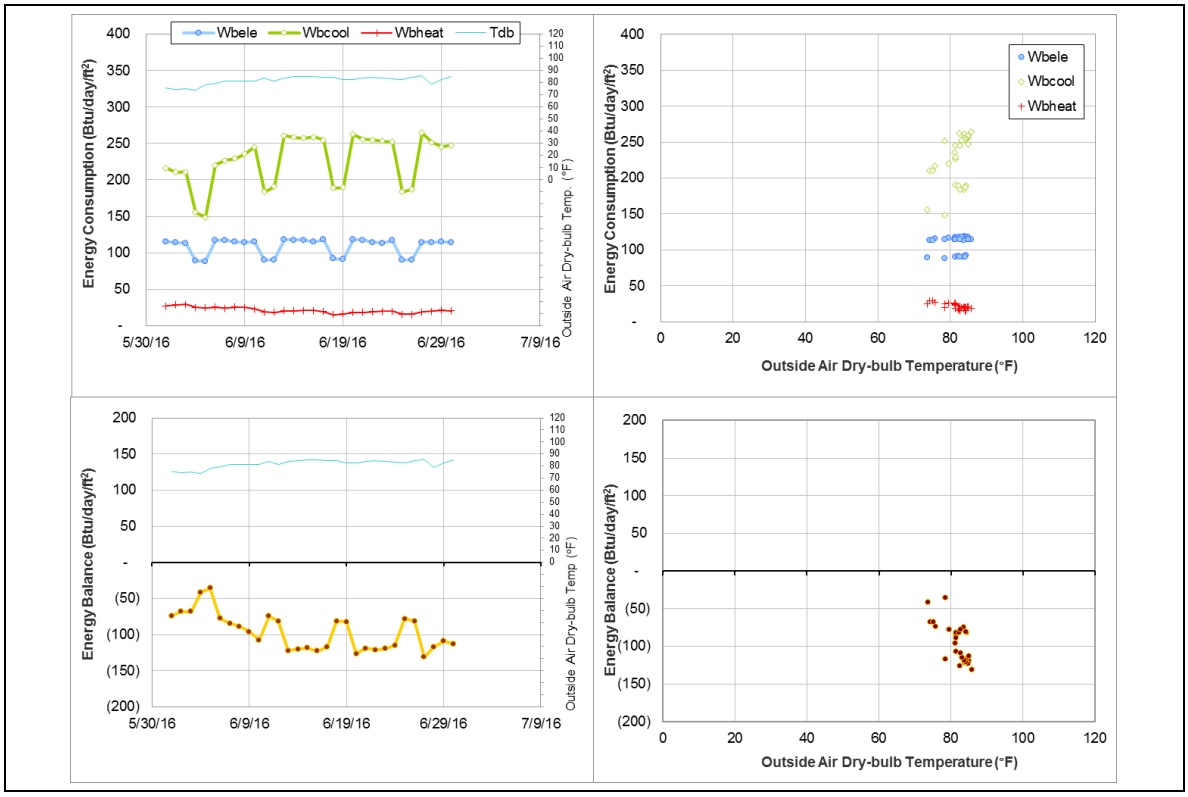
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW meter during August 2015 (top) and June 2016 (bottom))



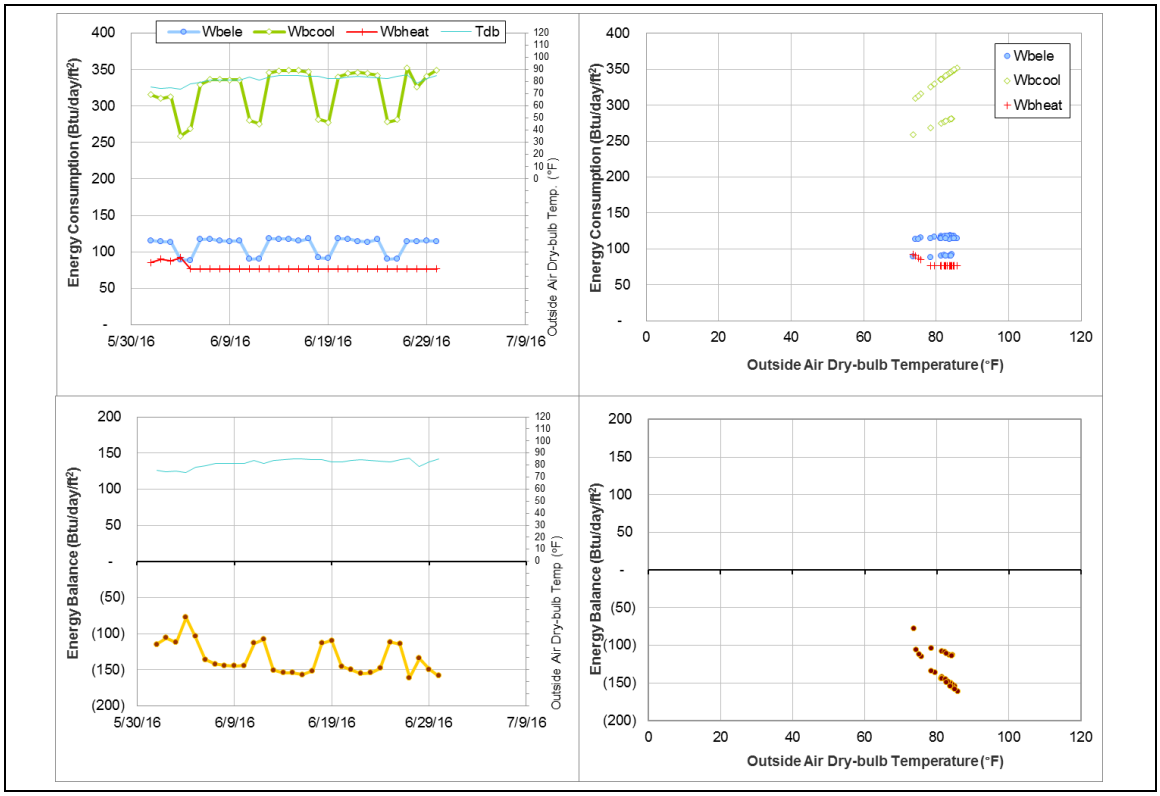
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW meter during August 2015 (top) and June 2016 (bottom))



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



McFadden Residence Hall (TAMU Bldg #550)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002188	17	6/8/2016 – 6/24/2016	Model
HHW	002192	17	6/8/2016 – 6/24/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period.	6/8/2016 – 6/24/2016
HHW	The consumption dropped for a short period.	6/8/2016 – 6/24/2016

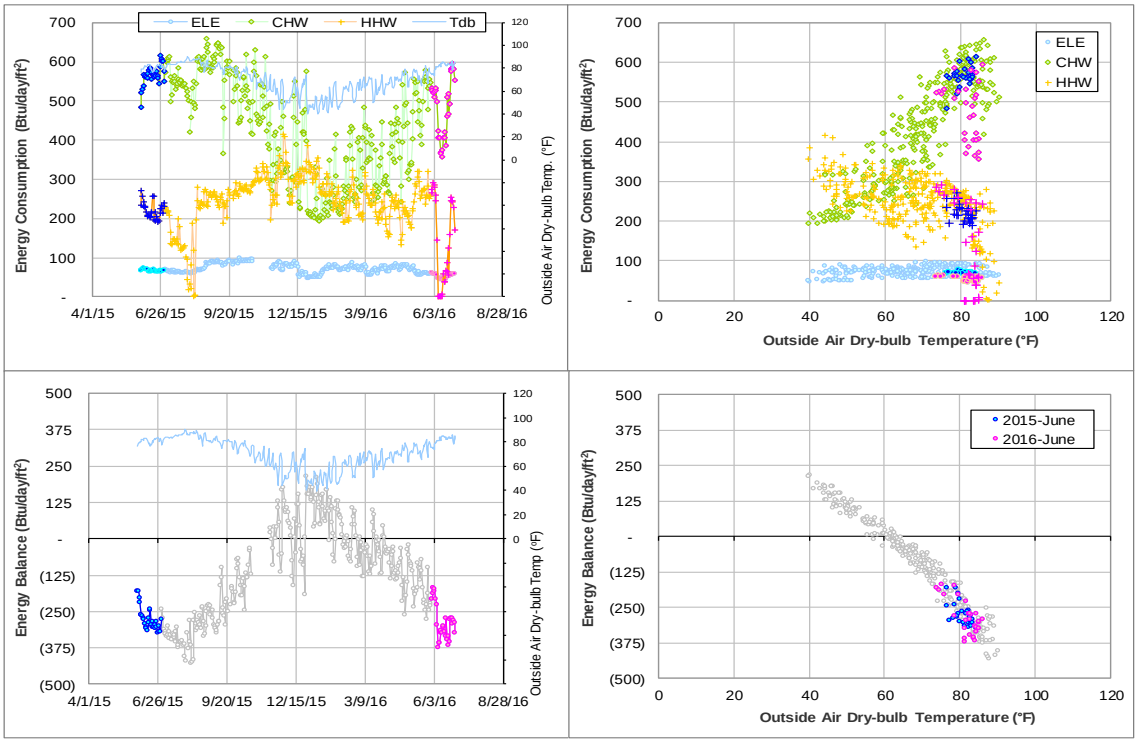
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002192	6/8/2016 – 6/24/2016	Flow rate	Sudden decrease, nearly zero
			Delta T	Sudden decrease, nearly zero

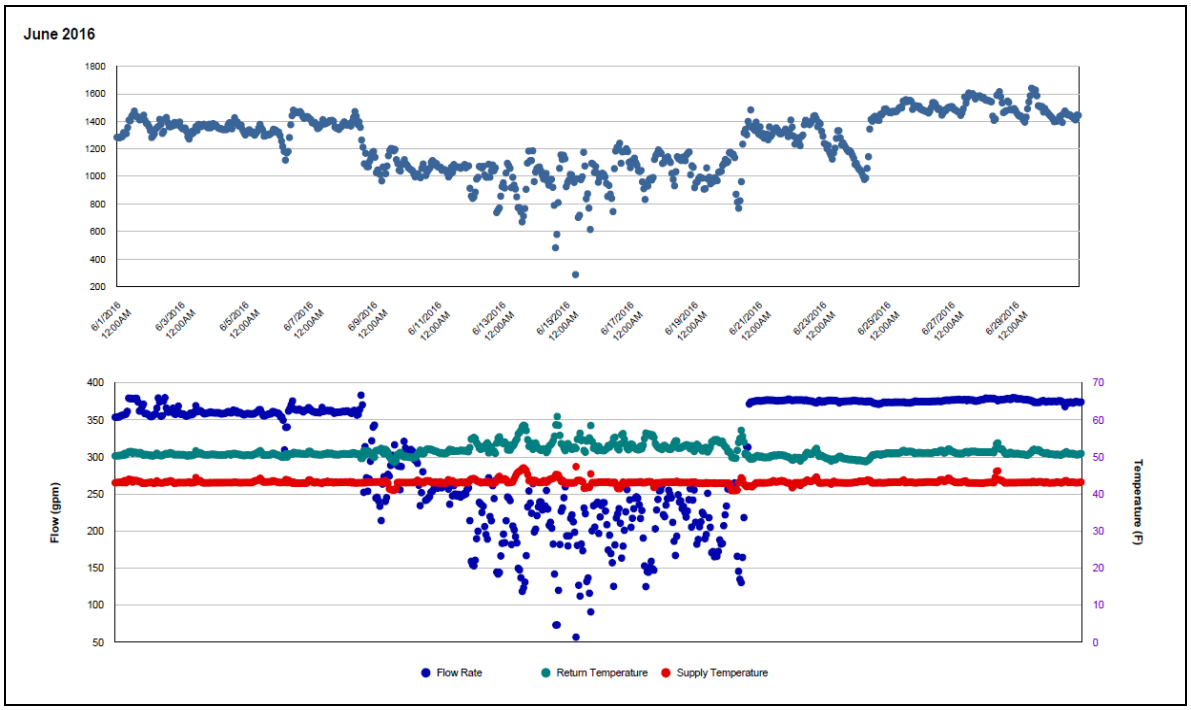
Quantitative descriptions and comments

During 6/8/2016 – 6/24/2016, the HHW flow rate and delta T suddenly decreased. The CHW consumption also decreased during the same period, possible as a result of the decrease in HHW. Both HHW and CHW were modeled for these days. ELE consumption also showed a slight decrease during the same period but was not estimated.

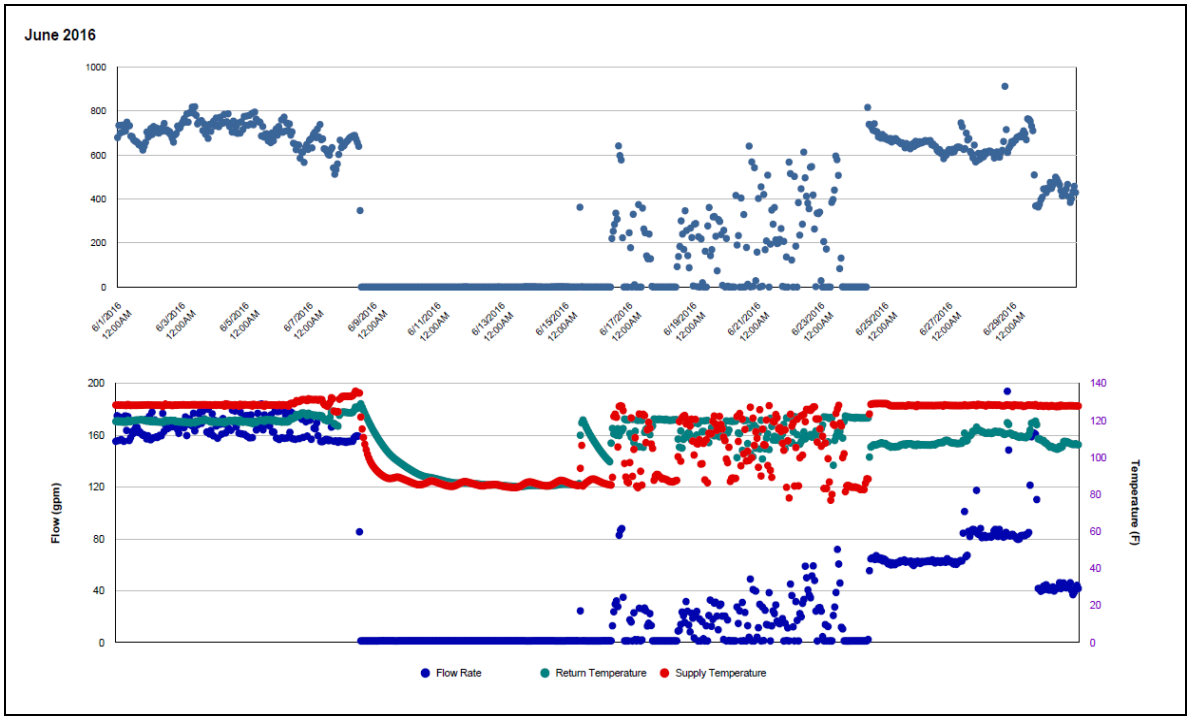
Explanatory Figure: 13 months energy balance plot with original data.



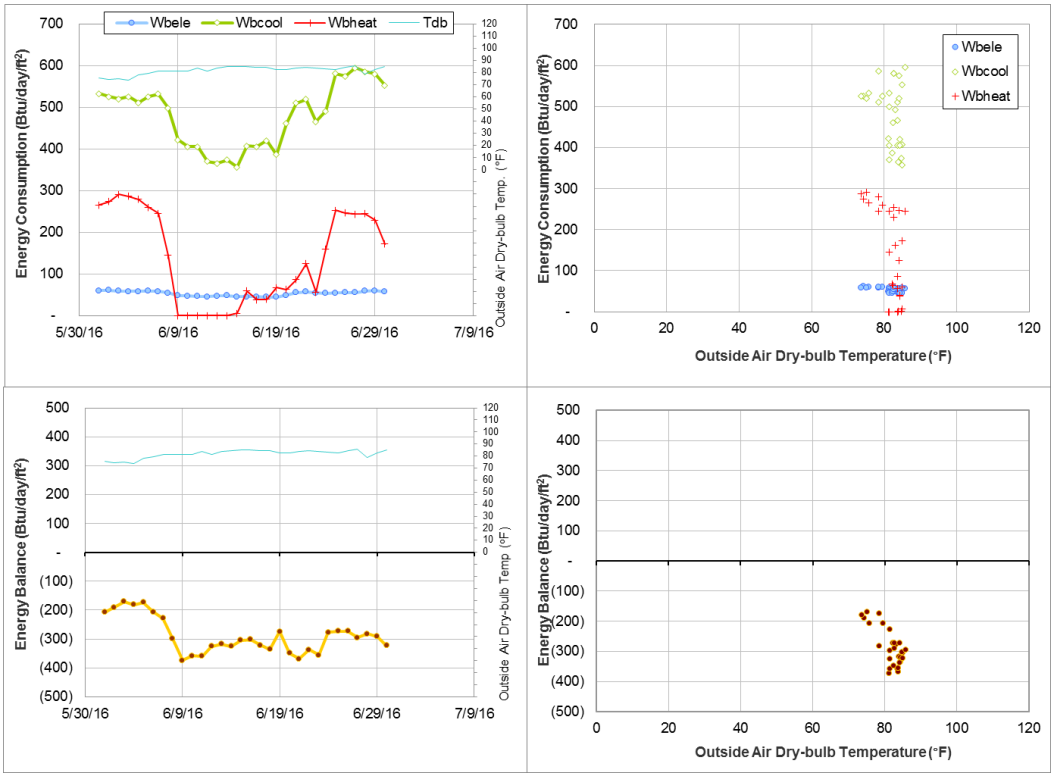
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (June 2016)



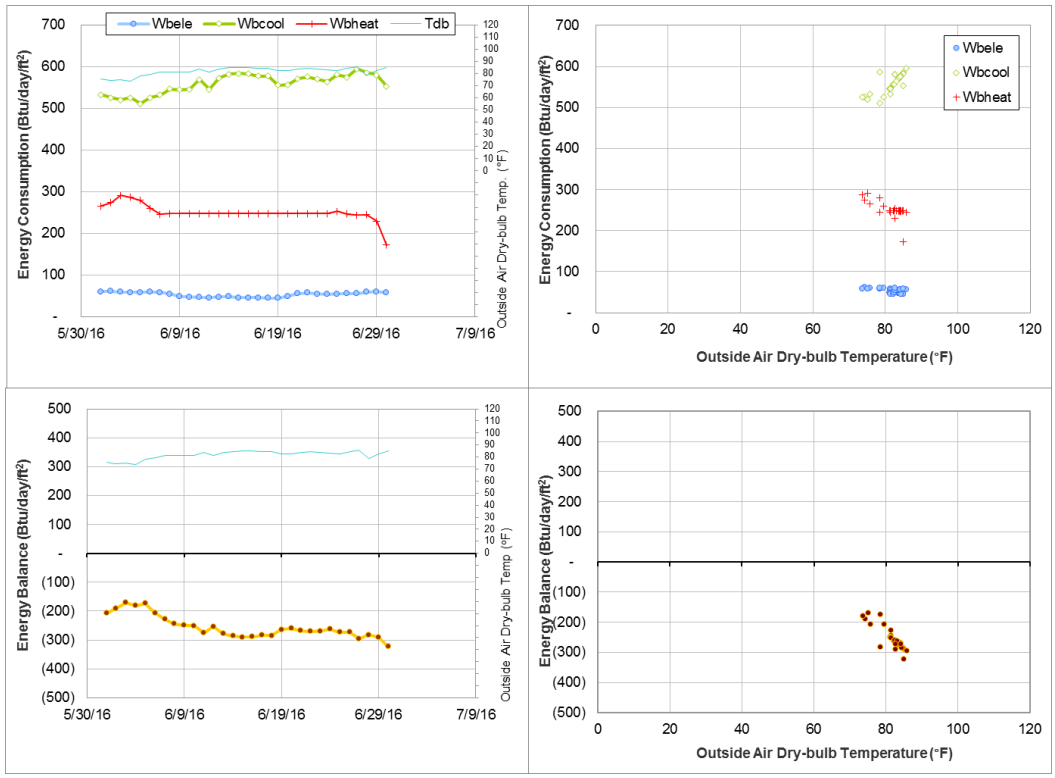
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (June 2016)



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



Neeley Residence Hall (TAMU Bldg #652)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	000056	27	6/1/2016 – 6/27/2016	Model
CHW	002147	3	6/24/2016 – 6/26/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	Decrease in energy consumption	5/19/2016 – 6/27/2016
CHW	The consumption dropped for a short period.	6/24/2016 – 6/26/2016

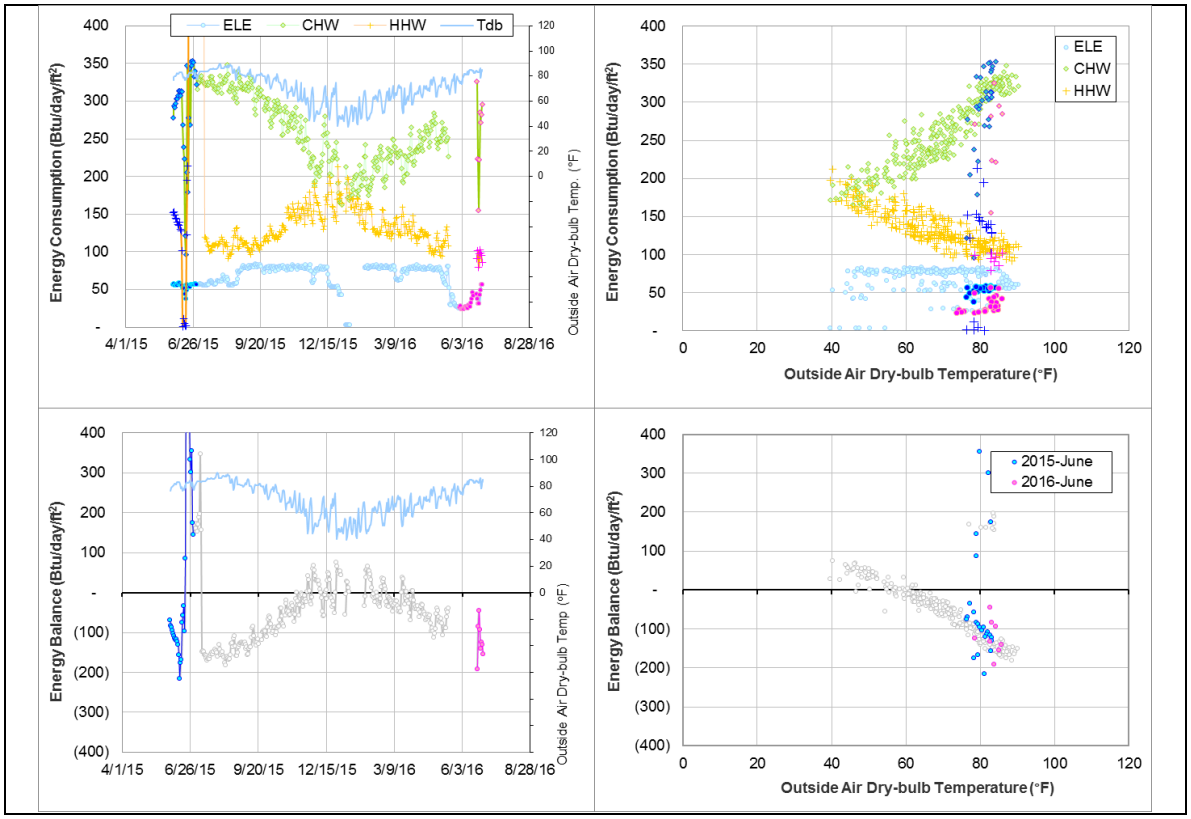
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002147	6/24/2016 – 6/26/2016	Flow rate	Sudden decrease

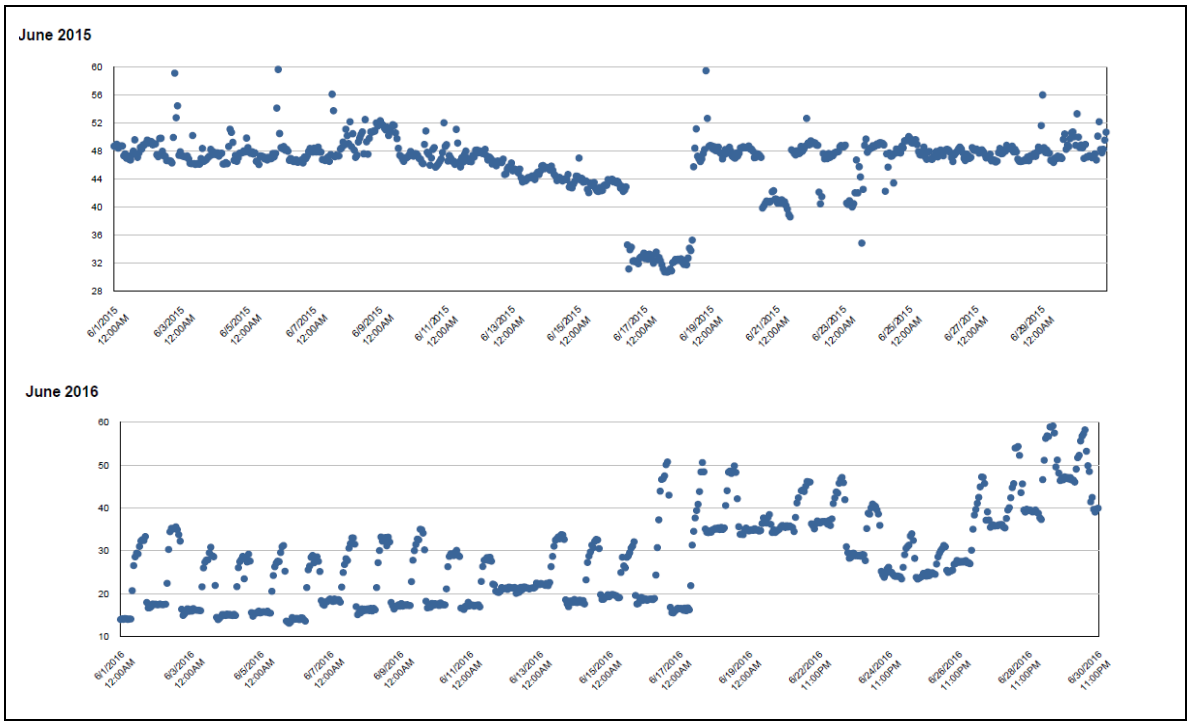
Quantitative descriptions and comments

During 5/19/2016 – 6/27/2016, the ELE consumption droped to an average 642 kWh/day. With the spring semester ending, it is expected to see a drop in consumption; however, about the same time last summer the drop in ELE was only down to an average 1158 kWh/day. Since the ELE consumption for the break period is almost half of that from last summer, these days have been model using the data from last summer. CHW consumption experienced a signifcant drop during 6/24/2016-6/26/2016. The CHW flow and delta T reached zero or near zero values. These three days were estimated by model.

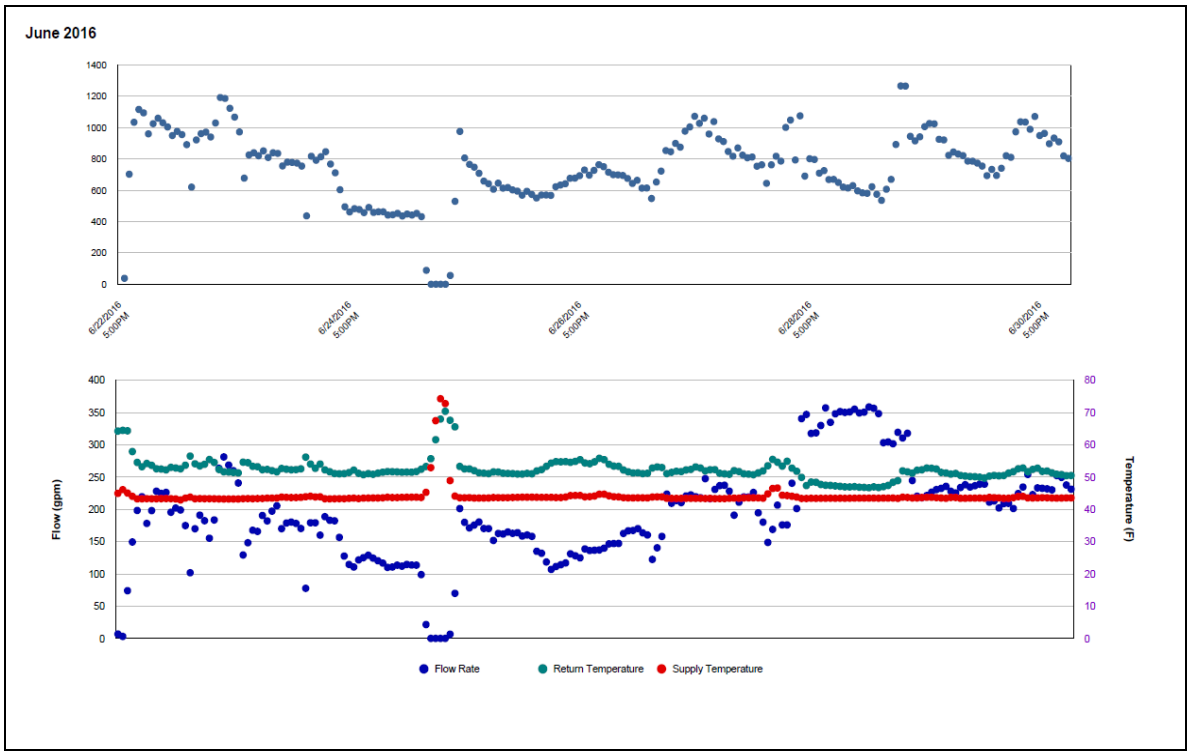
Explanatory Figure: 13 months energy balance plot with original data



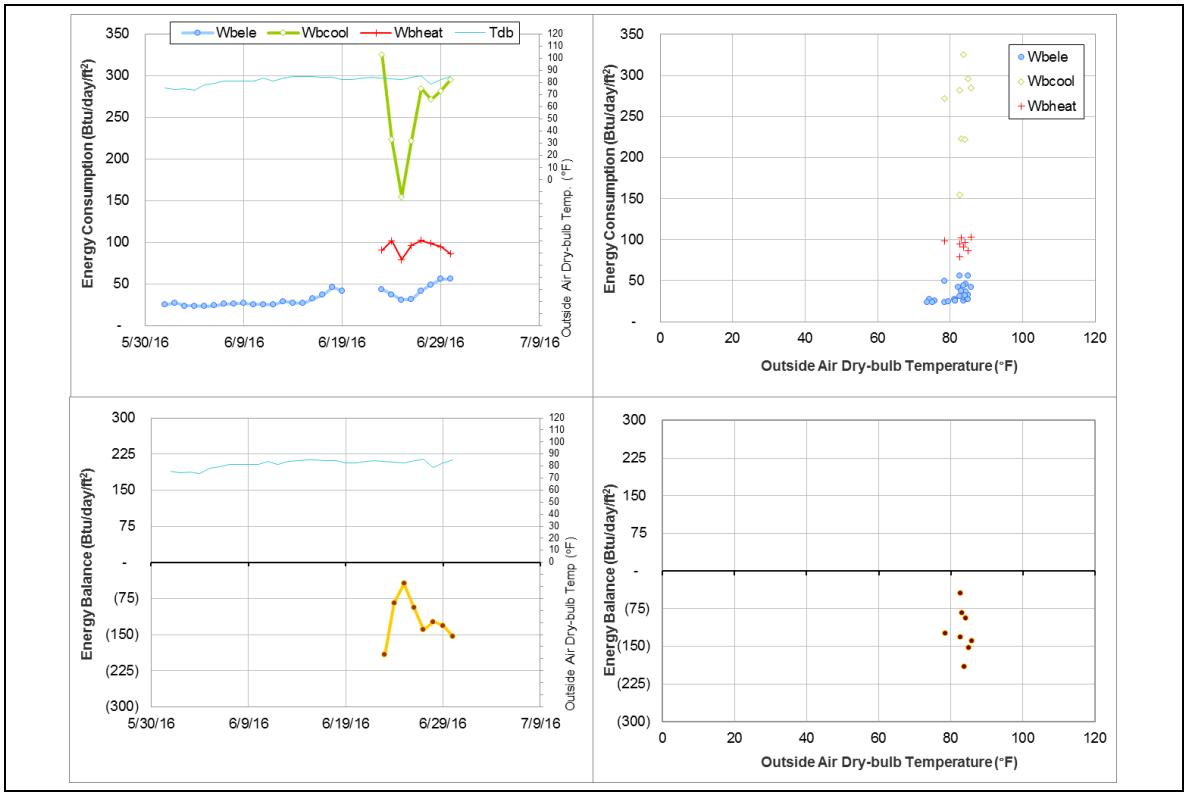
Explanatory Figure: Time series plots of hourly ELE energy consumption from utilities office. Top figure is June 2015; bottom figure is June 2016.



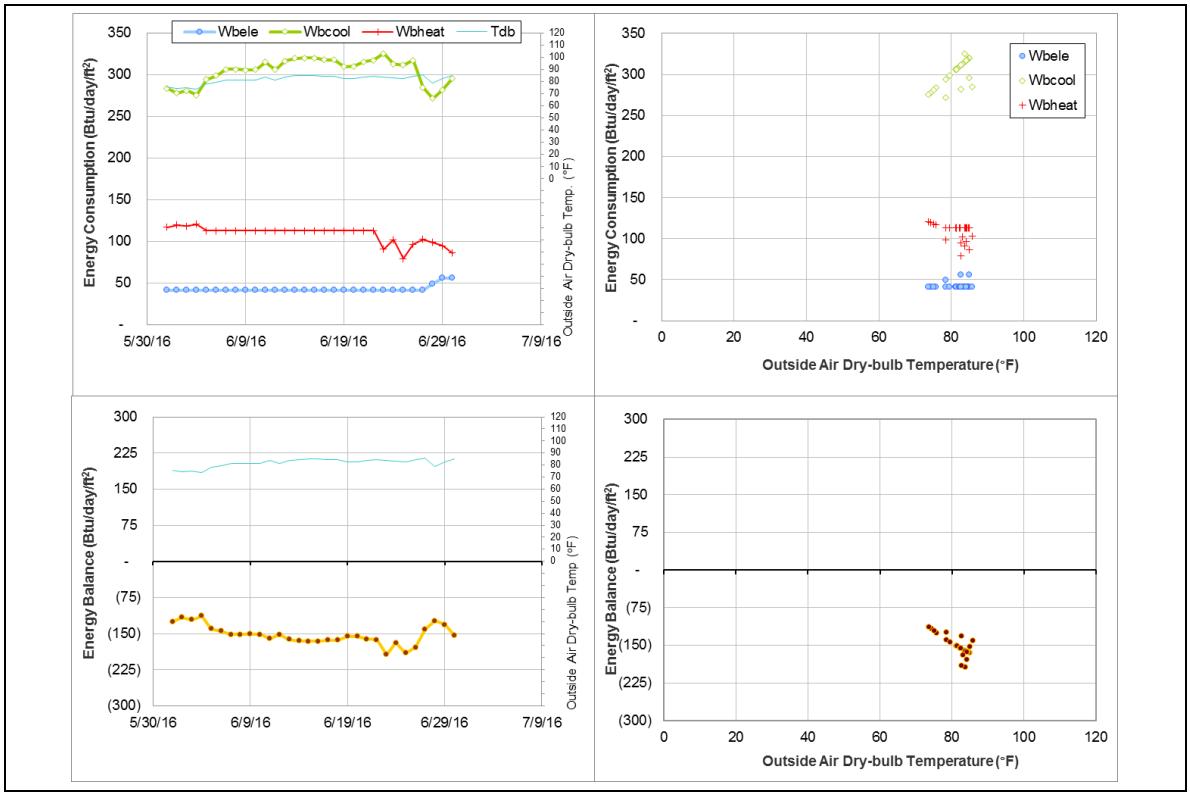
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (June 2016)



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



McNew Laboratory (TAMU Bldg #740)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005968	30	6/1/2016 – 6/30/2016	Model
CHW	005974	13	6/1/2016 – 6/13/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The level decreased and the cross-point of temperature is too low.	3/22/2013–ongoing
HHW	The consumption level decreased by 60% or more.	3/22/2013–ongoing
CHW	The consumption level decreased.	6/1/2016 – 6/13/2016

Changes in sensor readings related to the detected issues

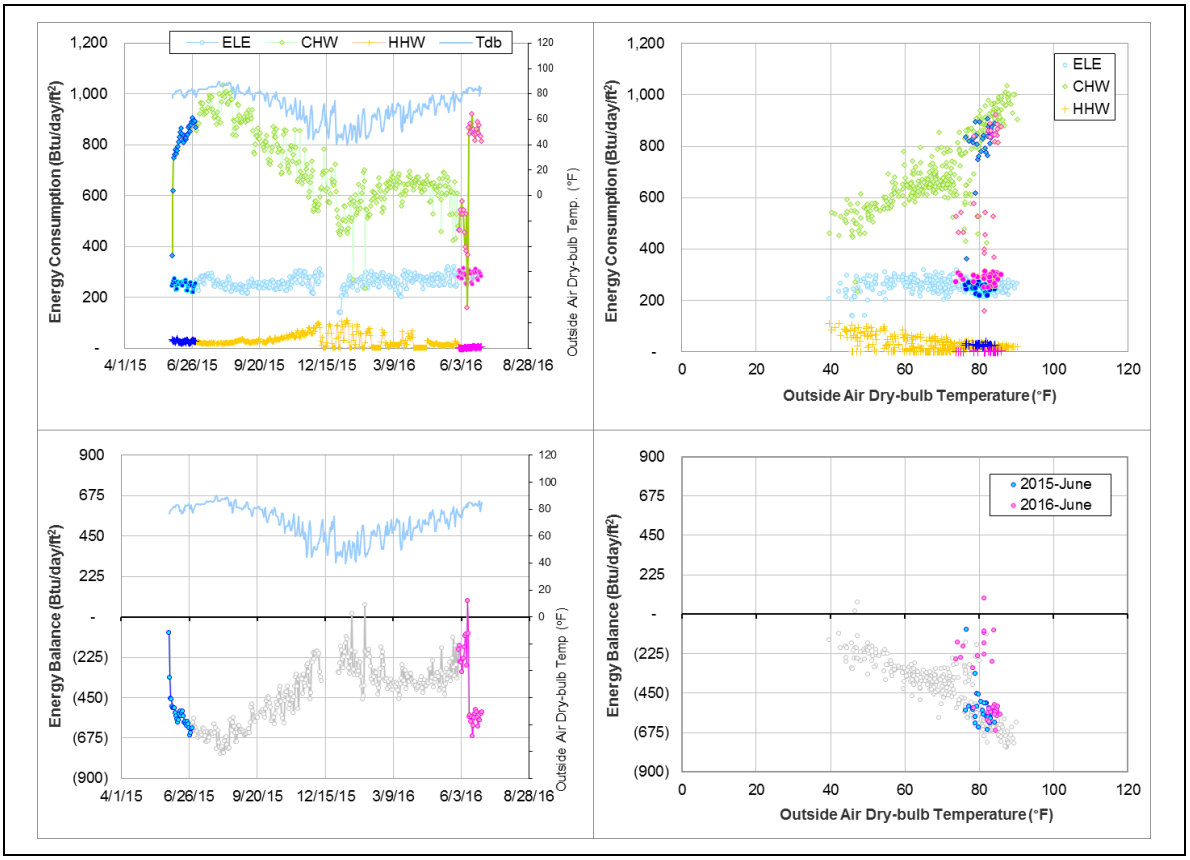
Energy Type	Meter ID	Period	Type	Description
HHW	005968	3/22/2013–1/1/2014	Flow Rate	Decreased largely
		1/1/2014 - ongoing	Delta-T	Small
CHW	005974	6/1/2016 – 6/13/2016	Flow Rate	Decreased largely
			Delta T	Small

Quantitative descriptions and comments

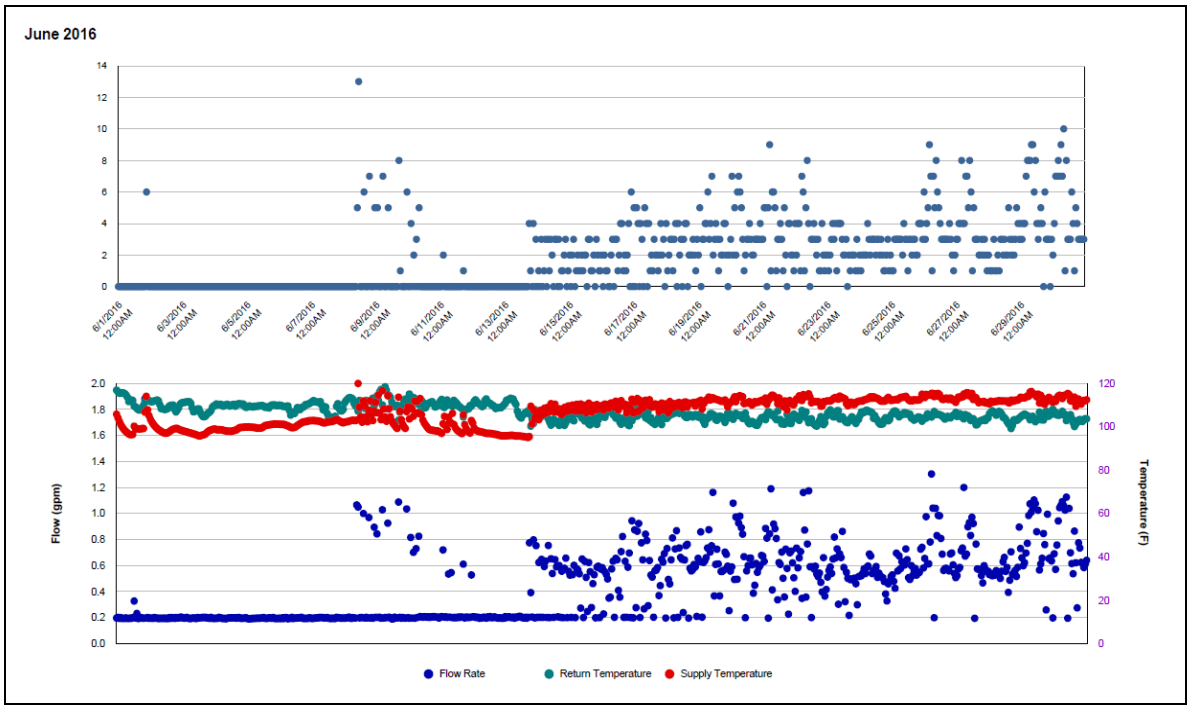
The energy balance level decreased to around 40˚F cross-point temperature after 3/22/2013 due to the decreased of the HHW consumption. The HHW consumption in current month is about 200 Btu/day/ft^2 lower than that before 3/22/2013. The current Delta-T for HHW meter is too small. It is suggested to investigate this meter. The HHW was estimated by a model.

CHW showed a couple of days of lower than expected consumption during higher OA temperatures. There appeared to be a decrease in CHW flow and delta T during these days. The CHW for these eight days was estimated by a model.

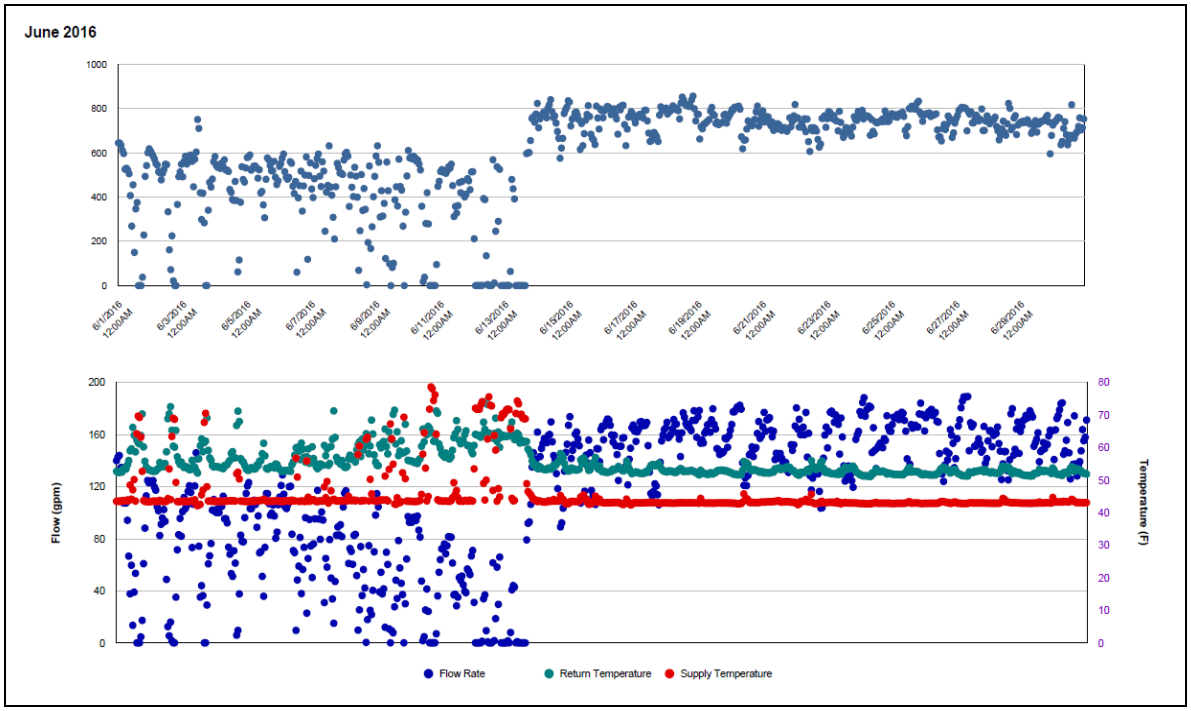
Explanatory Figure: 13 months energy balance plot with original data



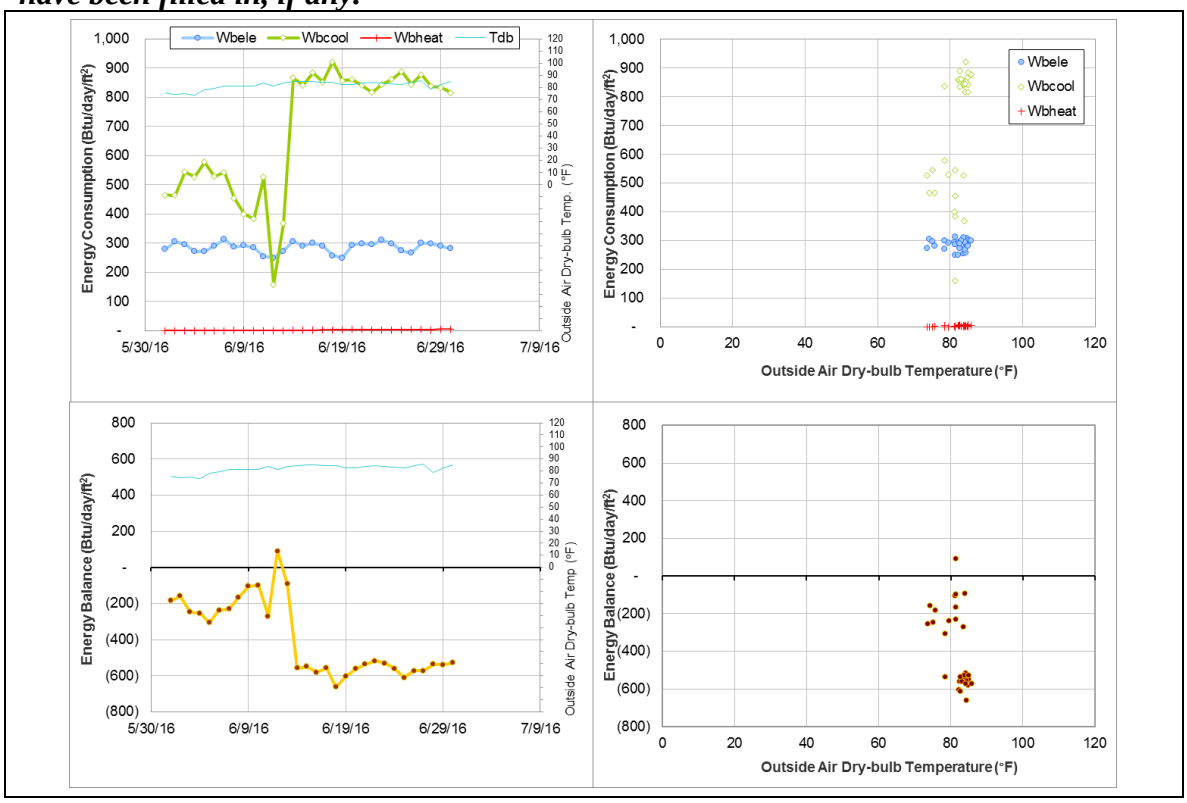
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (June 2016)



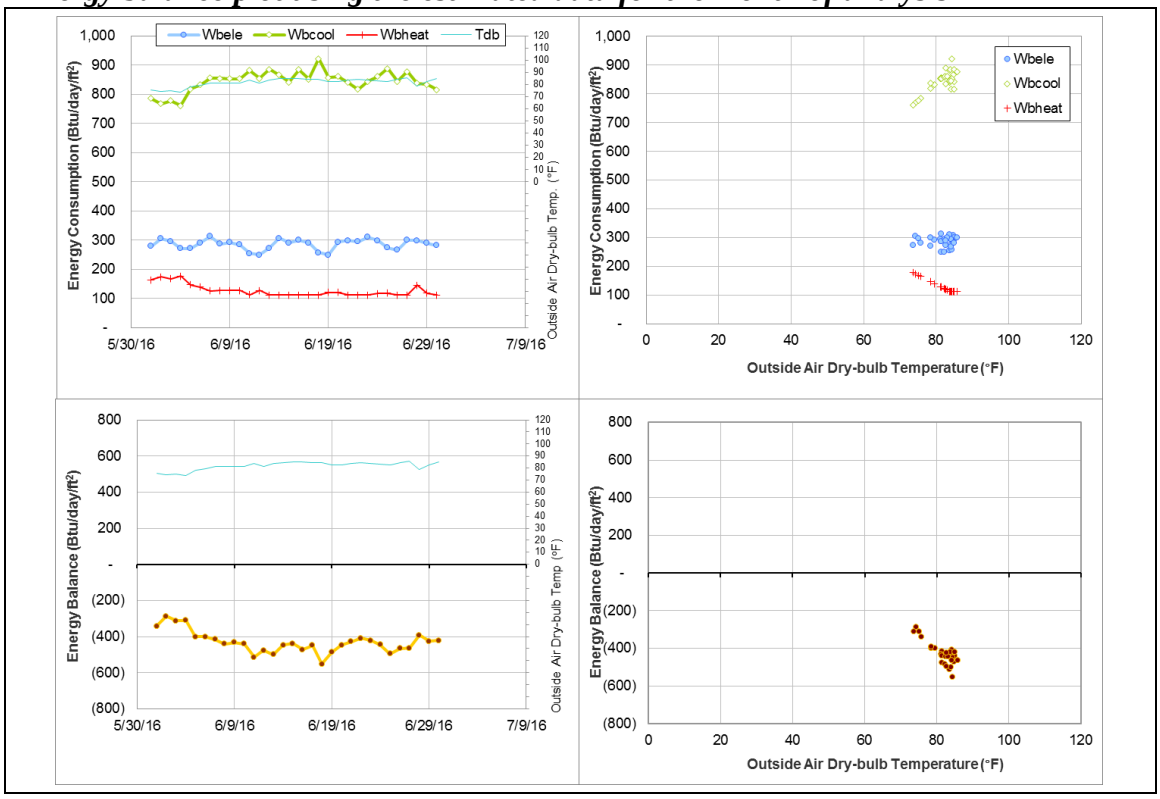
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (June 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



TVMC-Small Animal Building (TAMU Bldg #880)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005958	30	6/1/2016 – 6/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The CHW consumption level has decreased.	4/1/2016–ongoing

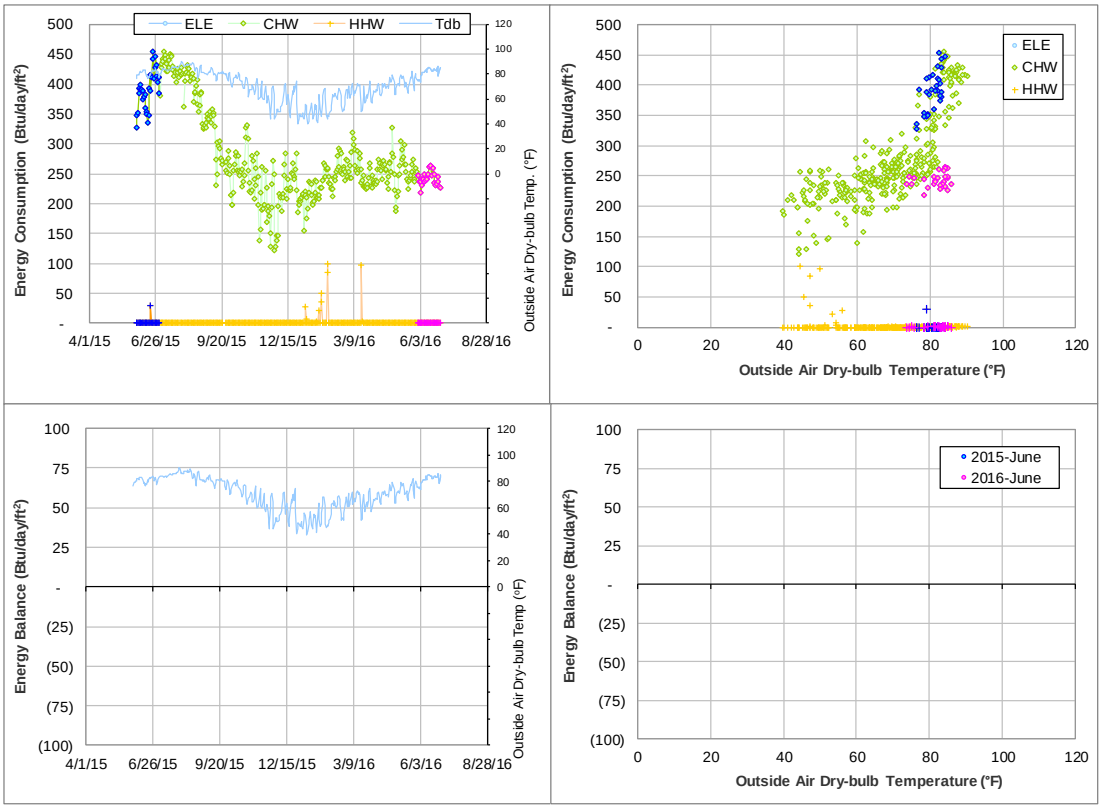
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005958	4/1/2016 – ongoing	Delta T	Small

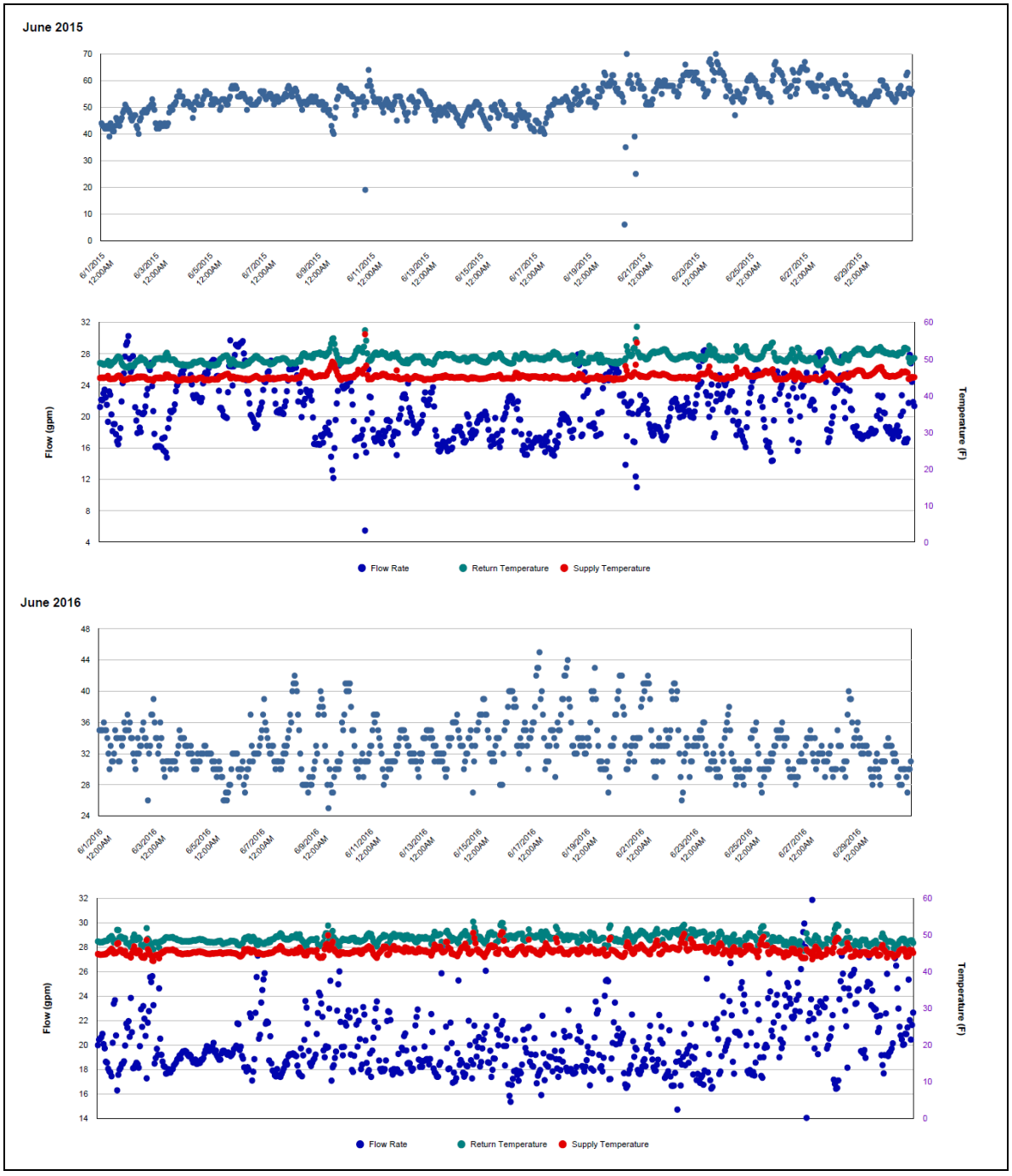
Quantitative descriptions and comments

The monthly CHW consumption has been decreasing since April. The recent energy consumption pattern has flattened out in higher temperatures. The consumption levels for Apr – Jun are at the same level as Feb and Mar. It looks like the delta T has not increased since winter, almost half of what it was last summer. The CHW for June has been estimated using a model.

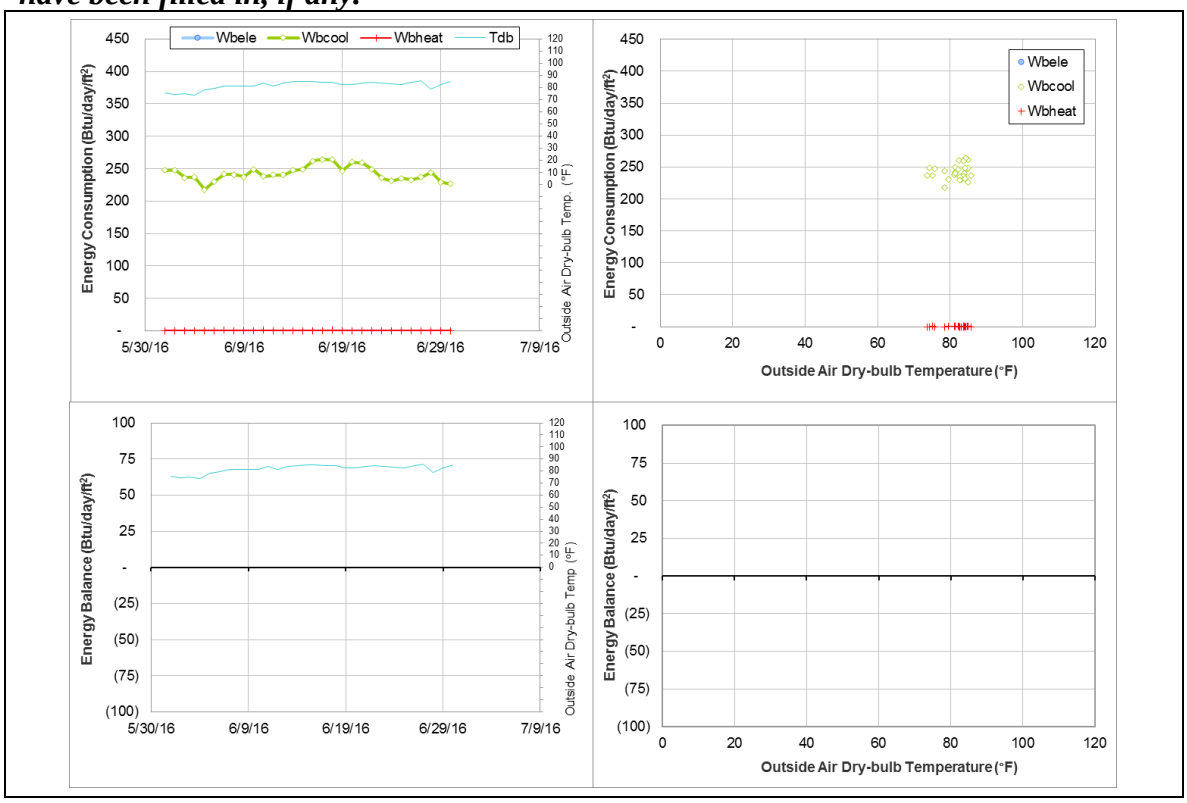
Explanatory Figure: 13 months energy balance plot with original data



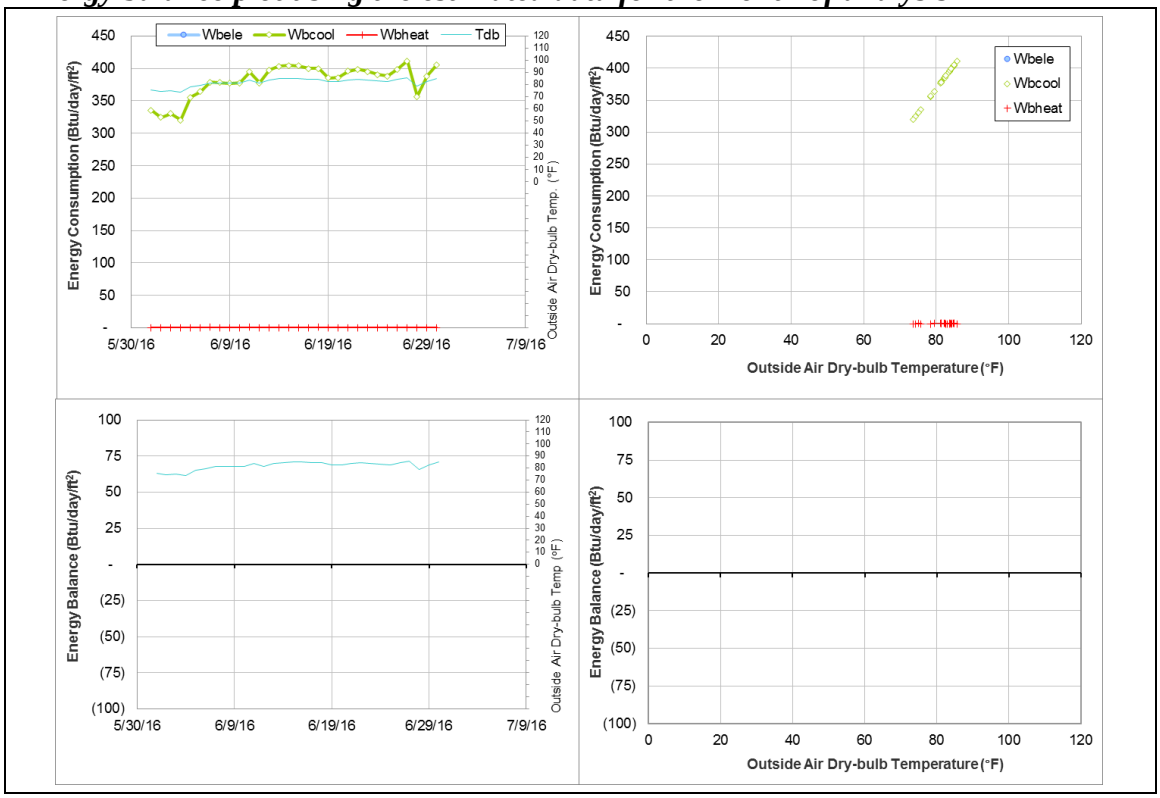
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (top June 2015, bottom June 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Southern Crop Improvement Greenhouse (TAMU Bldg #1512)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005931	30	6/1/2016 – 6/30/2016	Model

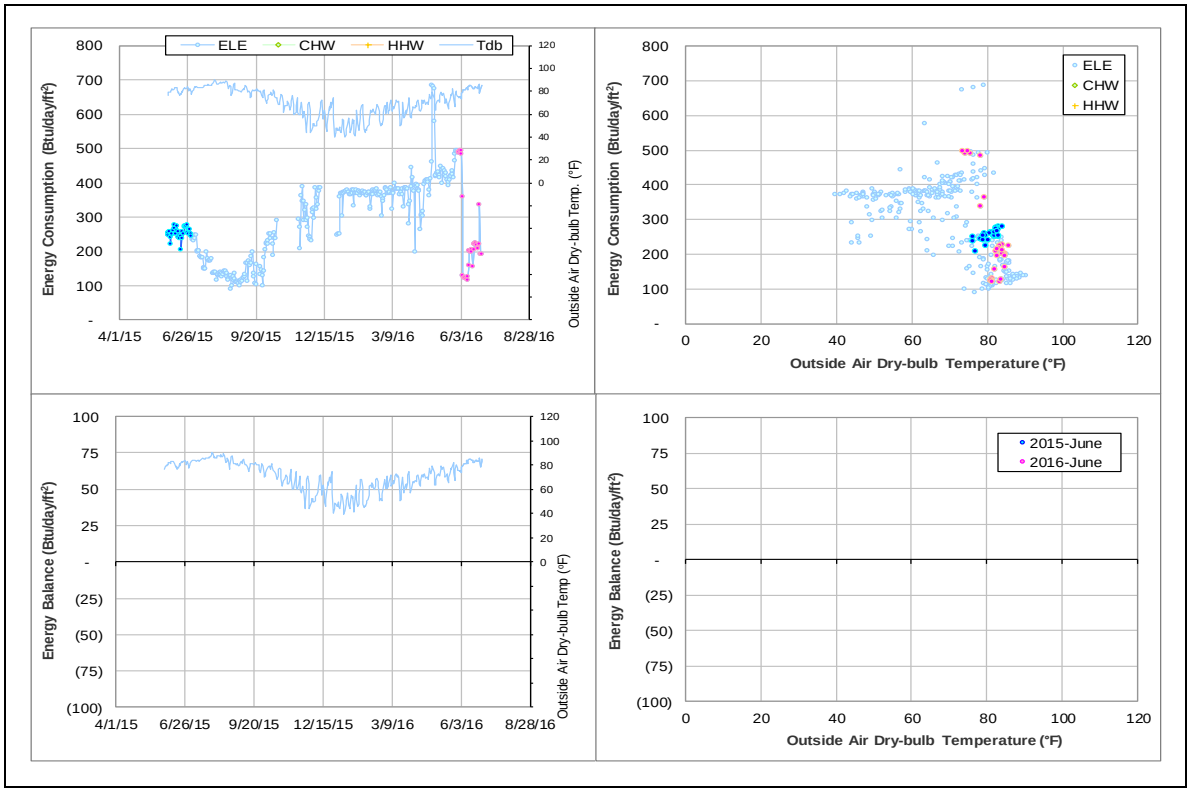
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption decreased.	7/22/2015 – 10/3/2015
	The consumption increased.	11/13/2015 – 6/6/2016
	The consumption decreased.	6/7/2016 - ongoing

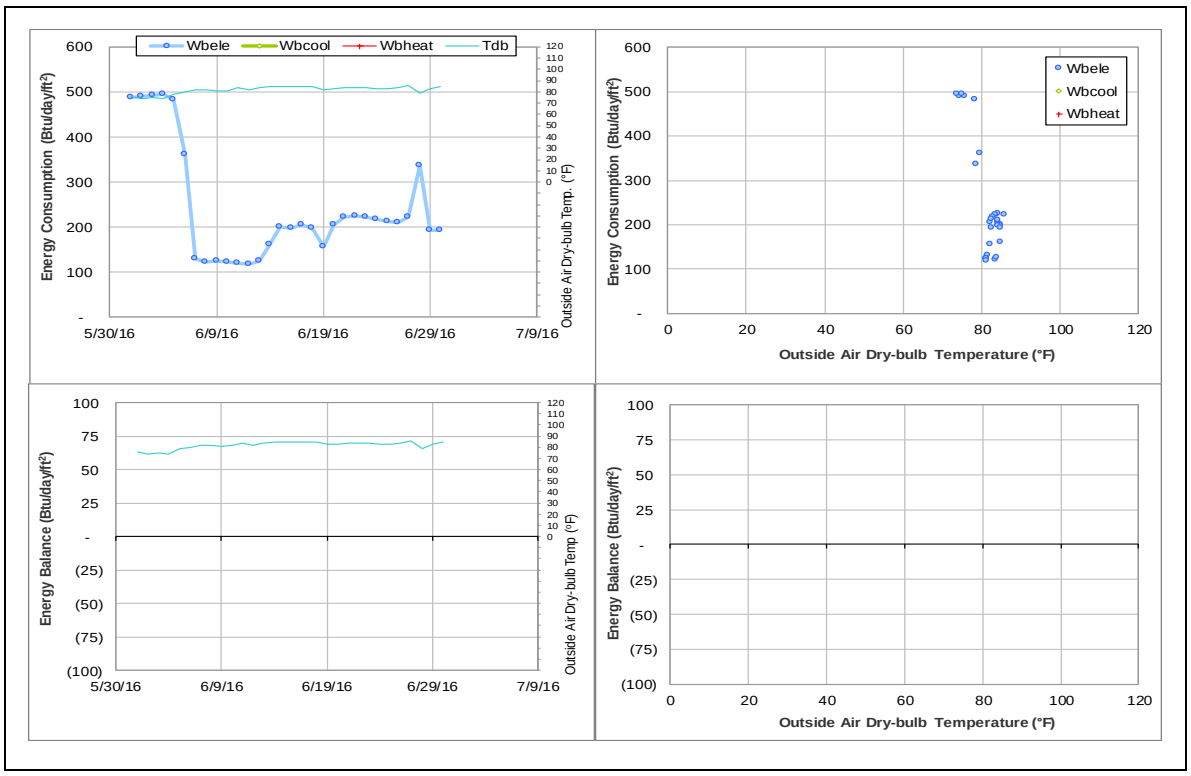
Quantitative descriptions and comments

The electricity consumption level changed frequently since July 2015. The consumption for entire month was estimated by a model based on the data during 7/1/2014 – 6/30/2015.

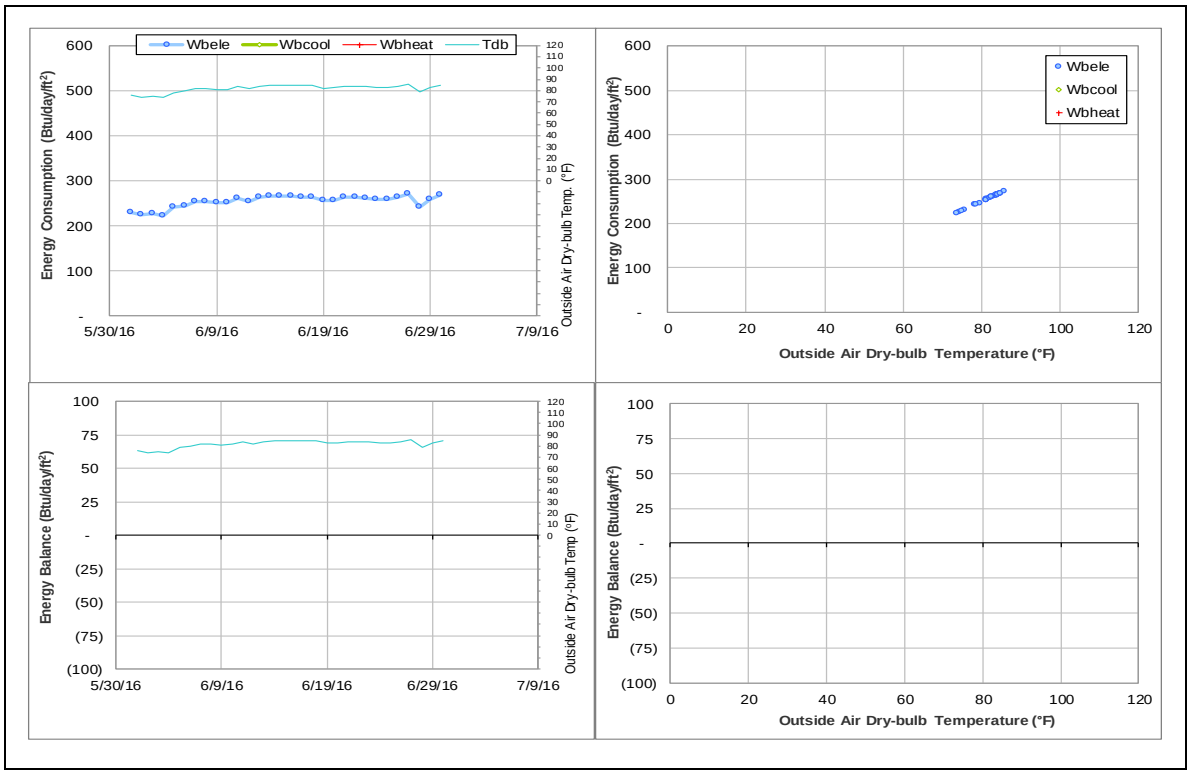
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



TX School of Rural Public Health (TAMU Bldg # 1518, 1519, 1520)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005274	30	6/1/2016-6/30/2016	Model
ELE	005275	30	6/1/2016-6/30/2016	Model
HHW	005298	7	6/21/2016 – 6/22/2016 6/24/2016 – 6/28/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE (005274)	The consumption level increased largely.	8/14/2015 - ongoing
ELE (005275)	The consumption level decreased largely.	8/14/2015 - ongoing
HHW (005298)	The consumption dropped for a short period.	6/21/2016 – 6/22/2016 6/24/2016 – 6/28/2016

Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	005298	6/21/2016 – 6/22/2016 6/24/2016 – 6/28/2016	Flow rate	Decreased to zero
			Supply Temperature	Decreased

Comments

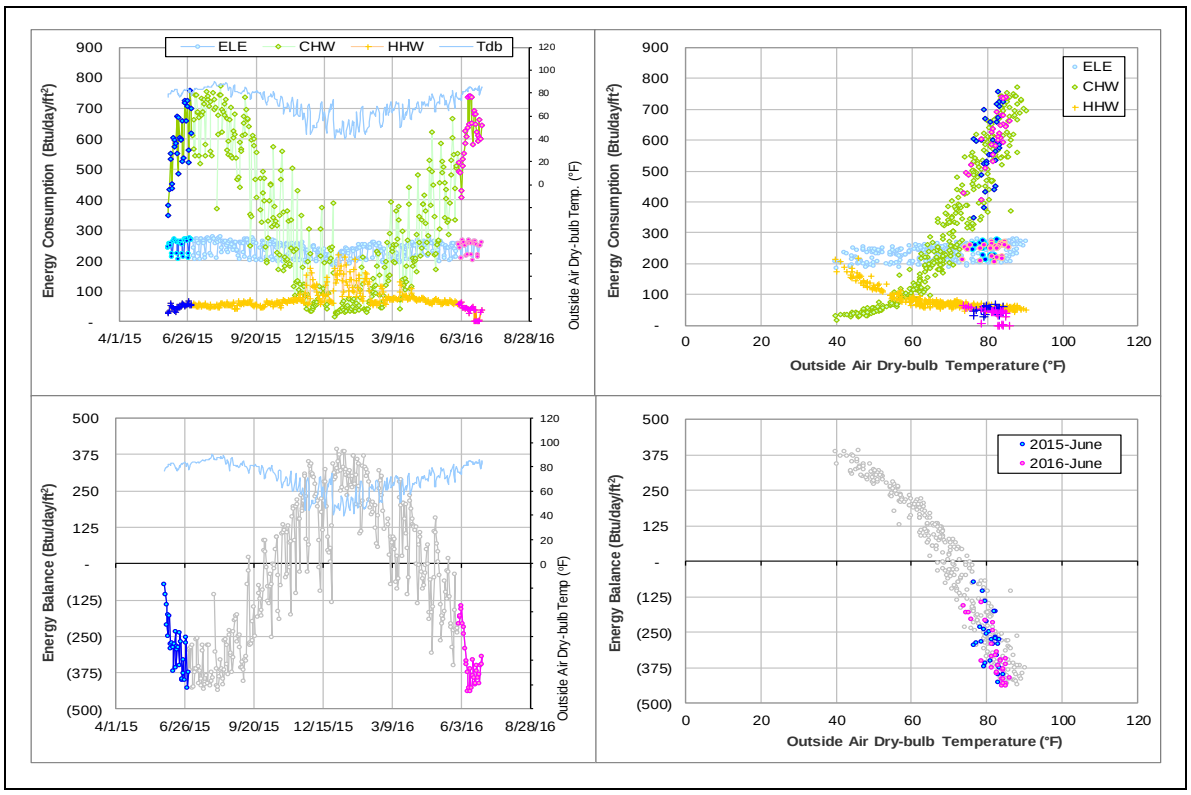
ELE meter (ID# 005274) is serve for TX School of Rural Public Health B and ELE meter (ID# 005275) is for TX School of Rural Public Health C.

The ELE consumption levels for these two meters have a sudden change on 8/14/2015. The consumption level for meterID 005274 increased by approximate 80 kWh/h (~ 100%) and the consumption level for meter ID 005275 decreased by around 80 kWh/h (~50%).

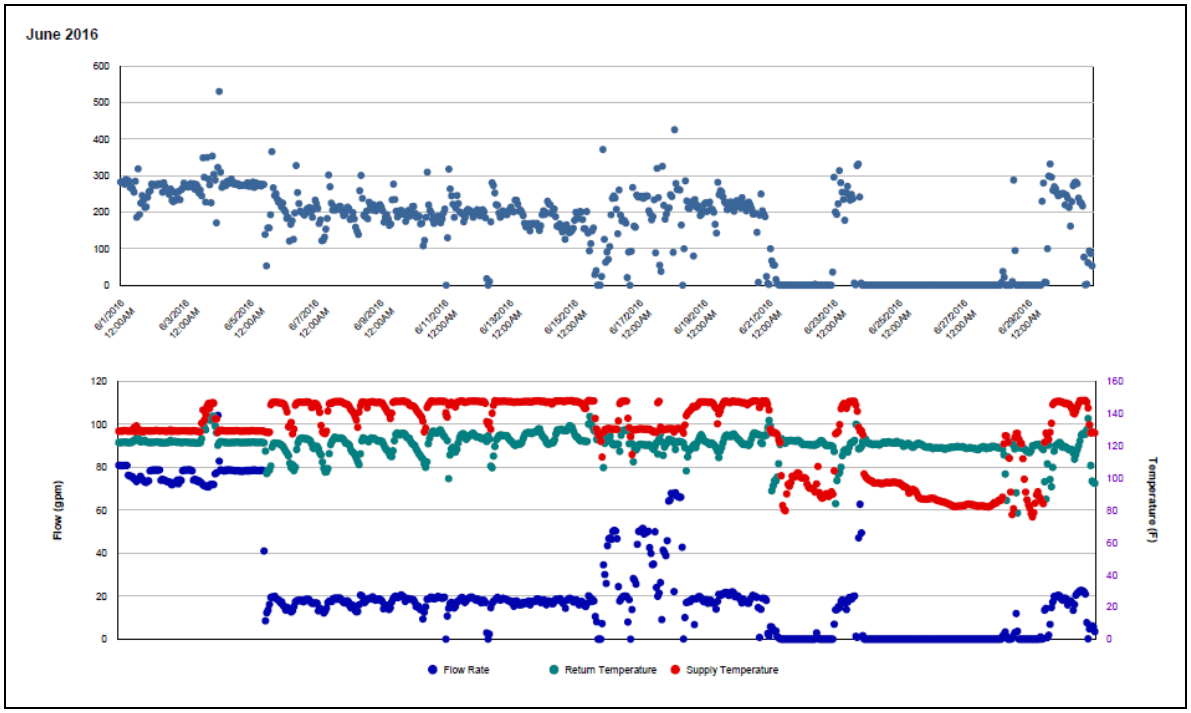
It was observed that the cumulative reading for these two meters switched on 8/14/2015 12:00 AM. It is suggested to investigate these two meters.

The HHW consumption dropped to zero or nearly zero during 6/21/2016 – 6/22/2016 and 6/24/2016 – 6/28/2016 caused by zero reading of flow rate. The consumption was estimated by a model.

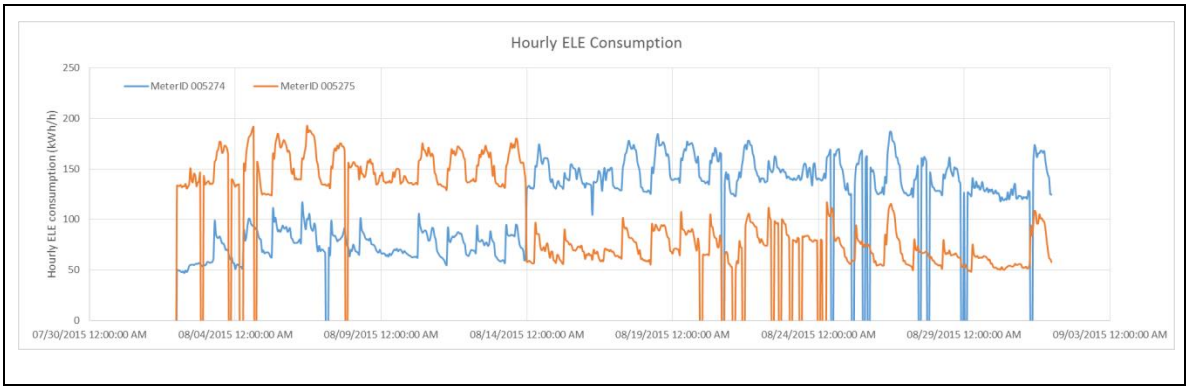
Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW meter during June 2016)



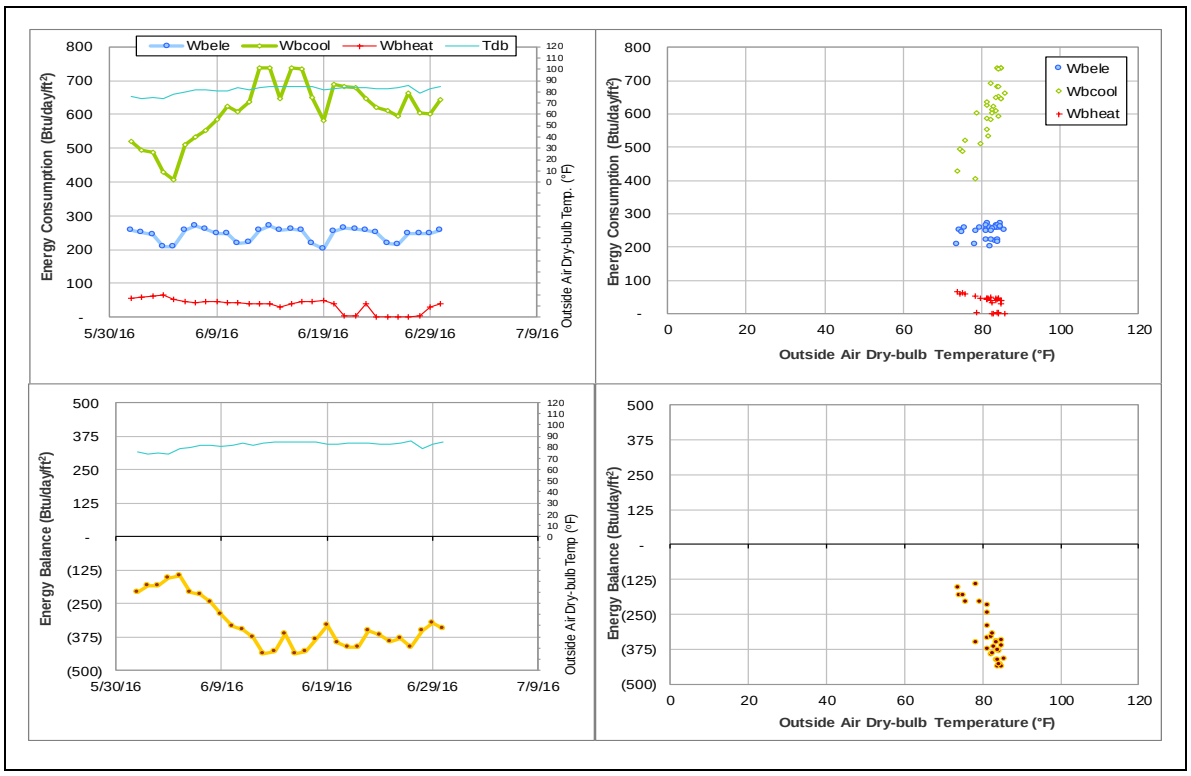
Explanatory Figure: The time series plot of hourly electricity consumption for two ELE meters #005274 and# 005275



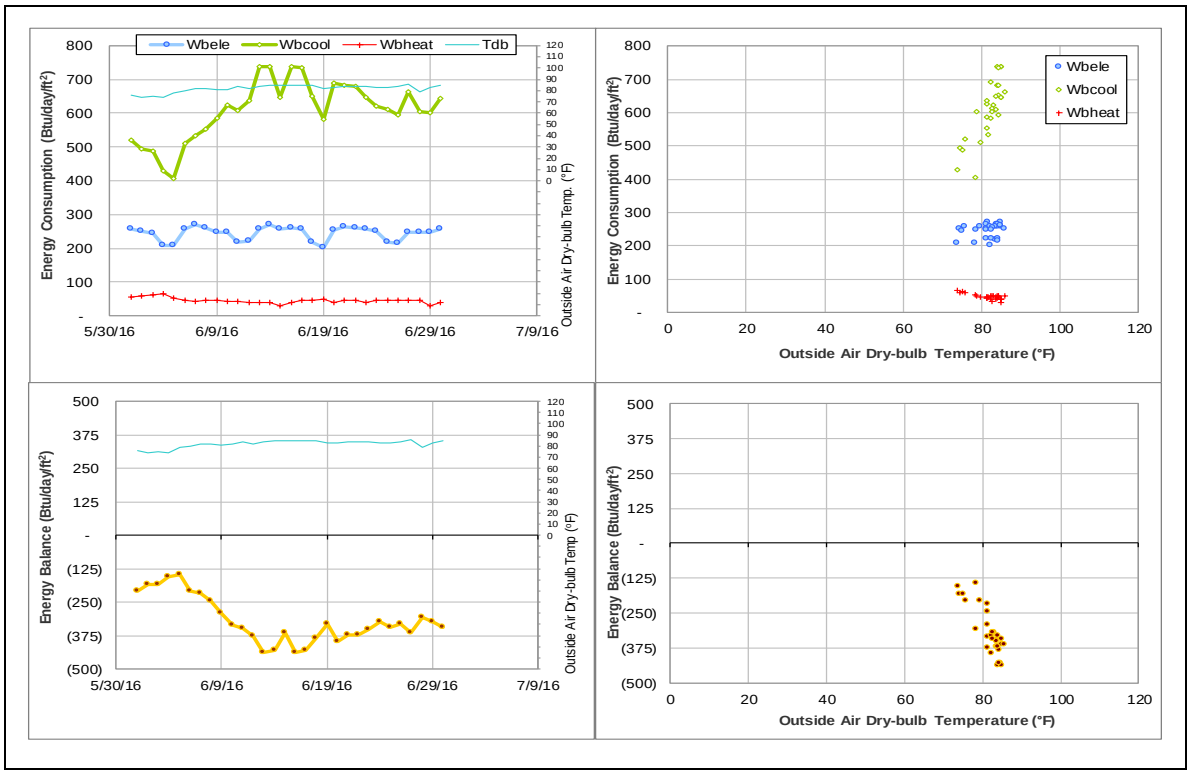
Explanatory Figure: The time series plot of hourly electricity consumption for two ELE meters #005274 and# 005275

Time	Cumulative reading	Hourly Consumption	MeterID		Time	Cumulative reading	Hourly Consumption	MeterID
08/13/2015 12:00:00 PM	2930884.013	84.262	005274		08/13/2015 12:00:00 PM	4741958.002	170.658	005275
08/13/2015 01:00:00 PM	2930968.589	84.576	005274		08/13/2015 01:00:00 PM	4742132.336	174.334	005275
08/13/2015 02:00:00 PM	2931051.959	83.37	005274		08/13/2015 02:00:00 PM	4742303.554	171.218	005275
08/13/2015 03:00:00 PM	2931146.799	94.84	005274		08/13/2015 03:00:00 PM	4742483.683	180.129	005275
08/13/2015 04:00:00 PM	2931240.505	93.706	005274		08/13/2015 04:00:00 PM	4742662.753	179.07	005275
08/13/2015 05:00:00 PM	2931324.169	83.664	005274		08/13/2015 05:00:00 PM	4742832.009	169.256	005275
08/13/2015 06:00:00 PM	2931399.91	75.741	005274		08/13/2015 06:00:00 PM	4742993.53	161.521	005275
08/13/2015 07:00:00 PM	2931472.181	72.271	005274		08/13/2015 07:00:00 PM	4743149.675	156.145	005275
08/13/2015 08:00:00 PM	2931543.838	71.657	005274		08/13/2015 08:00:00 PM	4743305.9	156.225	005275
08/13/2015 09:00:00 PM	2931613.306	69.468	005274		08/13/2015 09:00:00 PM	4743462.097	156.197	005275
08/13/2015 10:00:00 PM	2931672.706	59.4	005274		08/13/2015 10:00:00 PM	4743610.221	148.124	005275
08/13/2015 11:00:00 PM	2931733.072	60.366	005274		08/13/2015 11:00:00 PM	4743745.645	135.424	005275
08/14/2015 12:00:00 AM	4743876.03	130.385	005274		08/14/2015 12:00:00 AM	2931791.19	58.118	005275
08/14/2015 01:00:00 AM	4744008.406	132.376	005274		08/14/2015 01:00:00 AM	2931849.35	58.16	005275
08/14/2015 02:00:00 AM	4744141.74	133.334	005274		08/14/2015 02:00:00 AM	2931908.534	59.184	005275
08/14/2015 03:00:00 AM	4744272.553	130.813	005274		08/14/2015 03:00:00 AM	2931966.686	58.152	005275
08/14/2015 04:00:00 AM	4744404.045	131.492	005274		08/14/2015 04:00:00 AM	2932023.589	56.903	005275
08/14/2015 05:00:00 AM	4744534.38	130.335	005274		08/14/2015 05:00:00 AM	2932080.05	56.461	005275
08/14/2015 06:00:00 AM	4744667.111	132.731	005274		08/14/2015 06:00:00 AM	2932137.05	57	005275
08/14/2015 07:00:00 AM	4744820.038	152.927	005274		08/14/2015 07:00:00 AM	2932232.983	95.933	005275
08/14/2015 08:00:00 AM	4744972.221	152.183	005274		08/14/2015 08:00:00 AM	2932319.162	86.179	005275
08/14/2015 09:00:00 AM	4745134.467	162.246	005274		08/14/2015 09:00:00 AM	2932404.691	85.529	005275
08/14/2015 10:00:00 AM	4745308.905	174.438	005274		08/14/2015 10:00:00 AM	2932489.976	85.285	005275
08/14/2015 11:00:00 AM	4745476.832	167.927	005274		08/14/2015 11:00:00 AM	2932564.419	74.443	005275
08/14/2015 12:00:00 PM	4745634.44	157.608	005274		08/14/2015 12:00:00 PM	2932634.064	69.645	005275
08/14/2015 01:00:00 PM	4745789.345	154.905	005274		08/14/2015 01:00:00 PM	2932704.723	70.659	005275
08/14/2015 02:00:00 PM	4745949.369	160.024	005274		08/14/2015 02:00:00 PM	2932777.373	72.65	005275
08/14/2015 03:00:00 PM	4746110.346	160.977	005274		08/14/2015 03:00:00 PM	2932845.908	68.535	005275
08/14/2015 04:00:00 PM	4746270.903	160.557	005274		08/14/2015 04:00:00 PM	2932920.525	74.617	005275
08/14/2015 05:00:00 PM	4746431.347	160.444	005274		08/14/2015 05:00:00 PM	2932996.835	76.31	005275
08/14/2015 06:00:00 PM	4746586.415	155.068	005274		08/14/2015 06:00:00 PM	2933065.518	68.683	005275
08/14/2015 07:00:00 PM	4746727.476	141.061	005274		08/14/2015 07:00:00 PM	2933127.559	62.041	005275
08/14/2015 08:00:00 PM	4746864.372	136.896	005274		08/14/2015 08:00:00 PM	2933195.384	67.825	005275
08/14/2015 09:00:00 PM	4747004.372	140	005274		08/14/2015 09:00:00 PM	2933263.632	68.248	005275
08/14/2015 10:00:00 PM	4747137.886	133.514	005274		08/14/2015 10:00:00 PM	2933323.26	59.628	005275
08/14/2015 11:00:00 PM	4747269.569	131.683	005274		08/14/2015 11:00:00 PM	2933382.3	59.04	005275

Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



Reed Arena (TAMU Bldg #1554)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	006243	26	6/5/2016-6/30/2016	Model

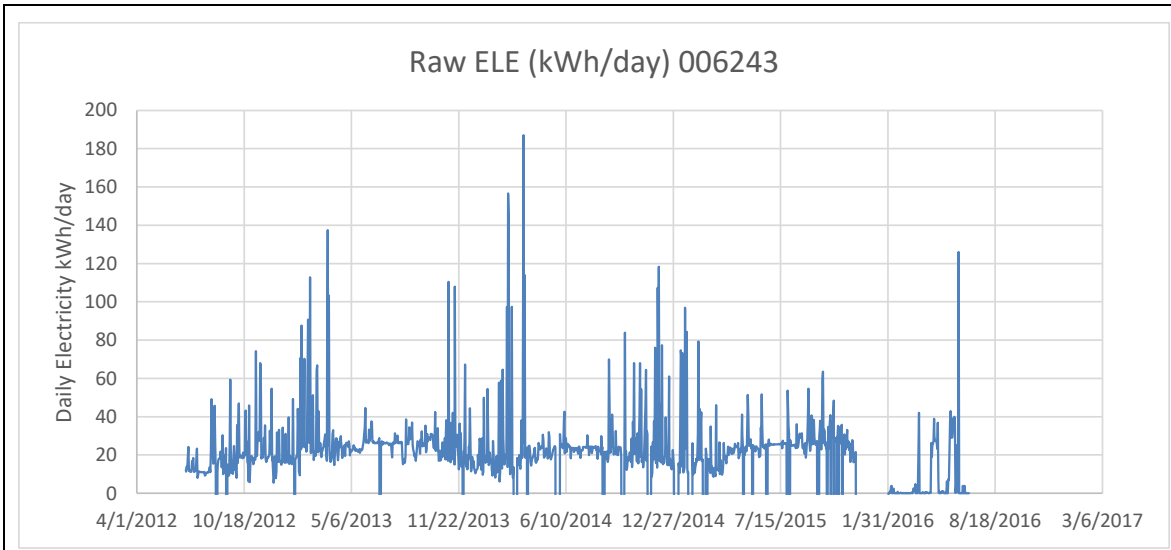
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption decreased largely.	2/1/2016-3/28/2016 3/30/2016-4/19/2016 5/4/2016-5/24/2016 6/5/2016-6/30/2016

Quantitative descriptions and comments

There are three ELE meters for this building. The consumption for one of them (ELE MID 006243) only counts for around 0.3% of total ELE consumption for this building. The consumption for ELE MID 006243 decreased to nearly zero since 2/1/2016. It increased back on 3/28/2016, but decreased to nearly zero during 3/30/2016 – 4/19/2016, 5/4/2016-5/24/2016, and 6/5/2016-6/30/2016. However, it doesn't affect the energy balance. The problematic consumption was estimated by a model based on the data during 1/1/2015 – 12/31/2015.

Explanatory Figure: Time series plot for ELE meter 006243



Cox-McFerrin Center for Aggie Basketball (TAMU Bldg #1558)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007575	21	6/10/2016 – 6/30/2016	Model

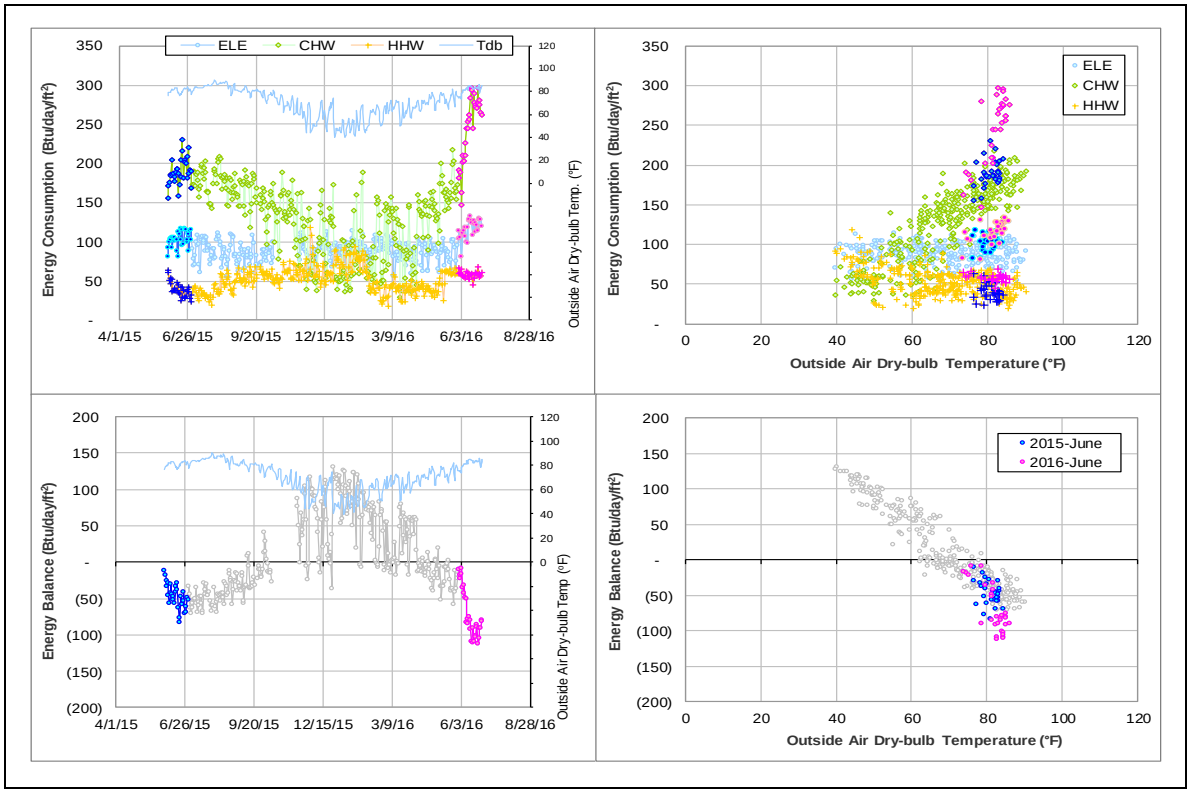
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption increased.	6/10/2016 –ongoing

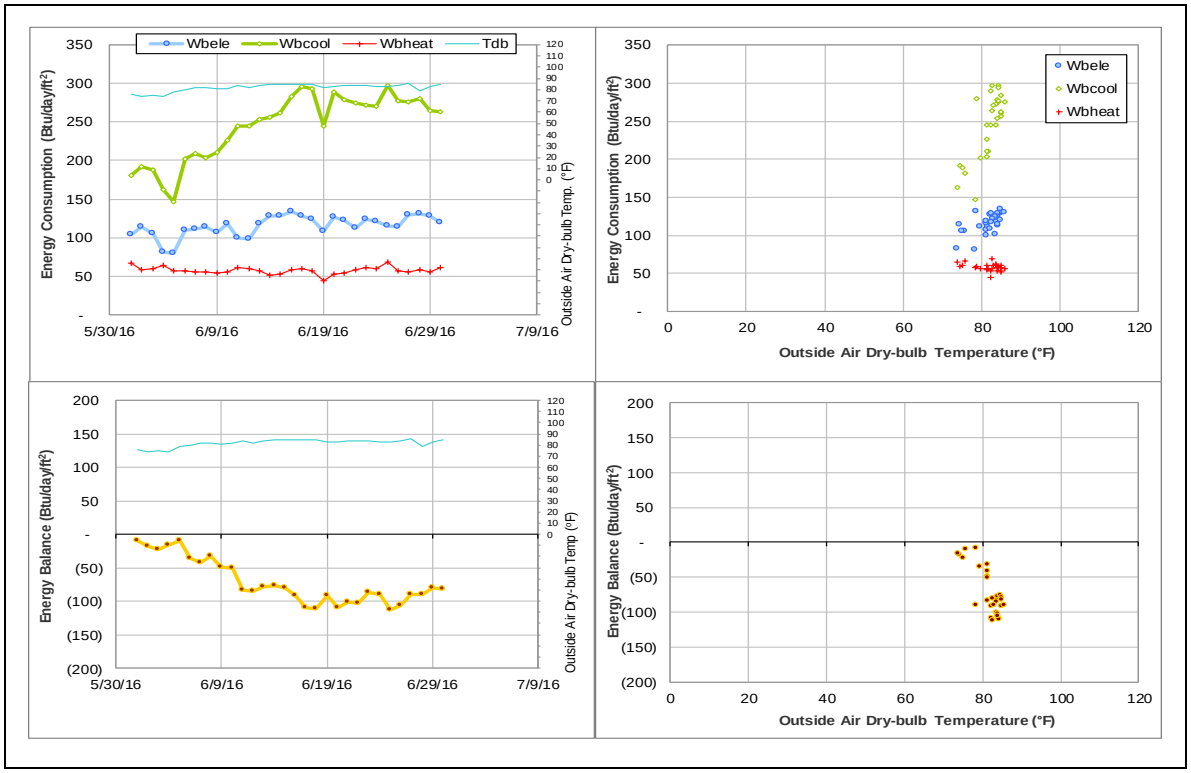
Quantitative descriptions and comments

The consumption increased gradually since 6/10/2016 caused by an increase of flow rate. The consumption was estimated by a model.

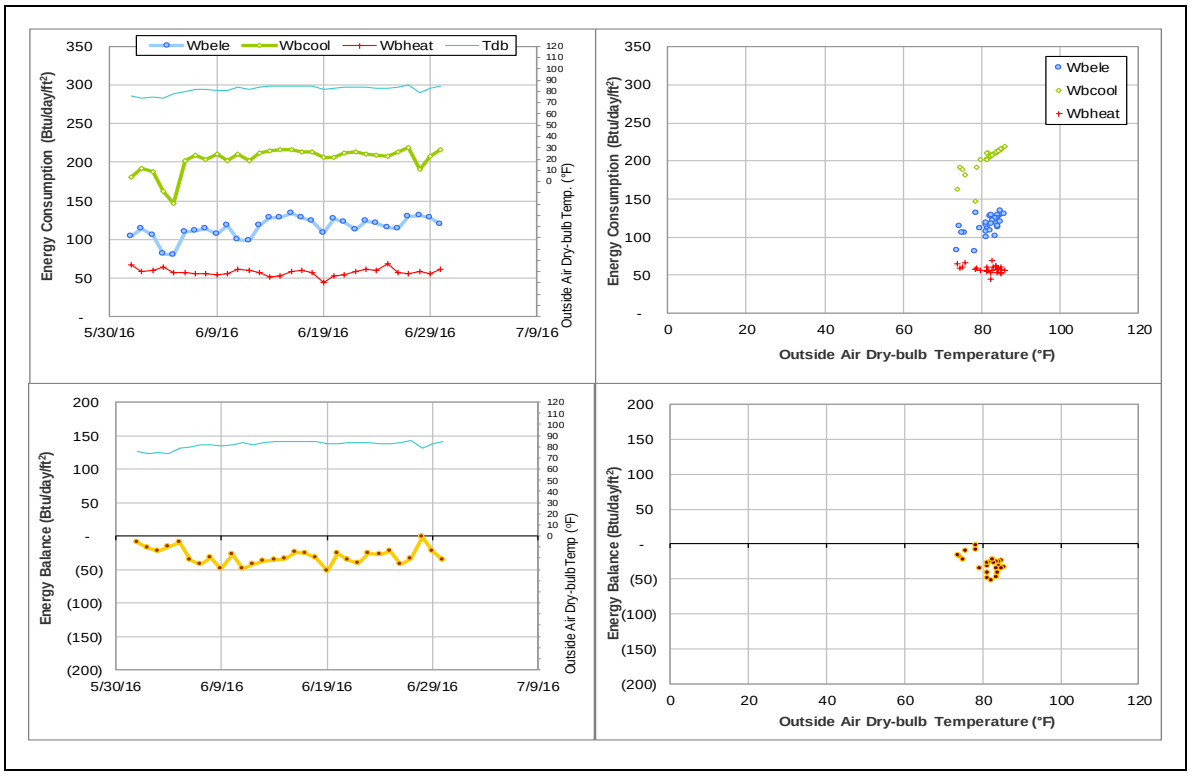
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



National Center for Therapeutics Manufacturing (TAMU Bldg #1910)

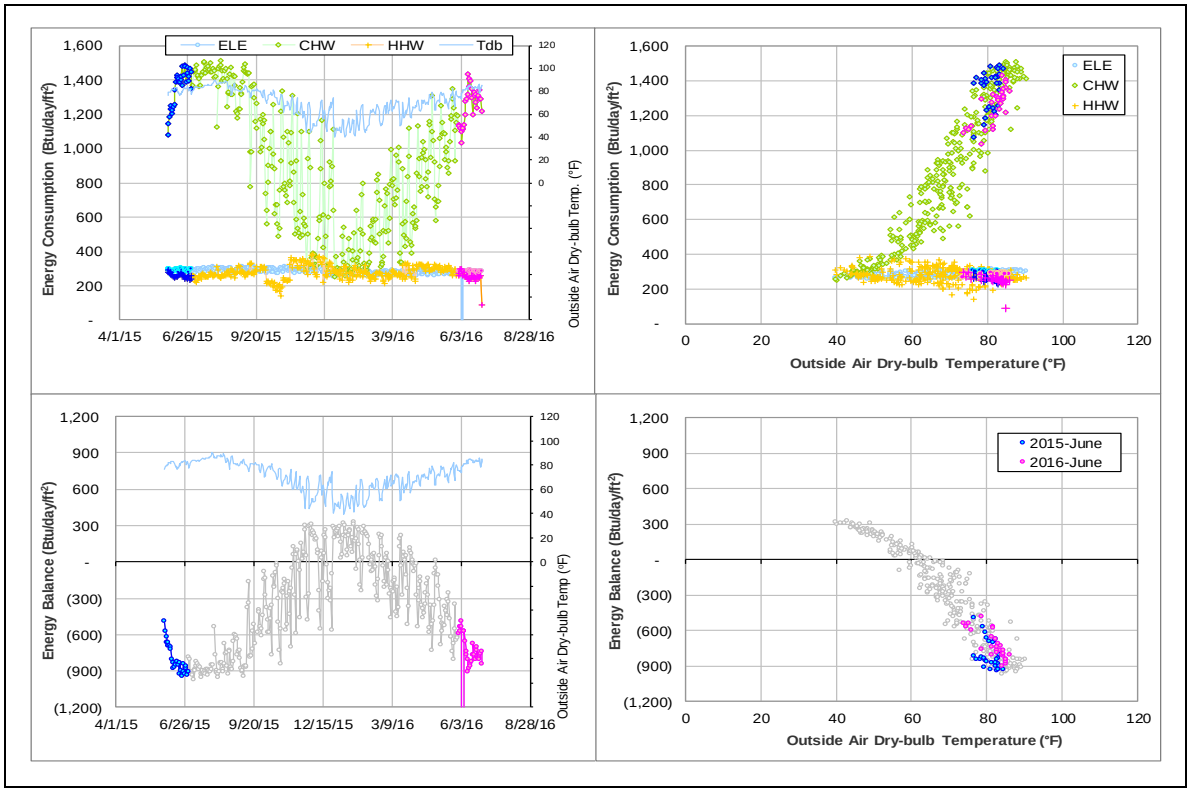
Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	007518	1	6/6/2016	Average

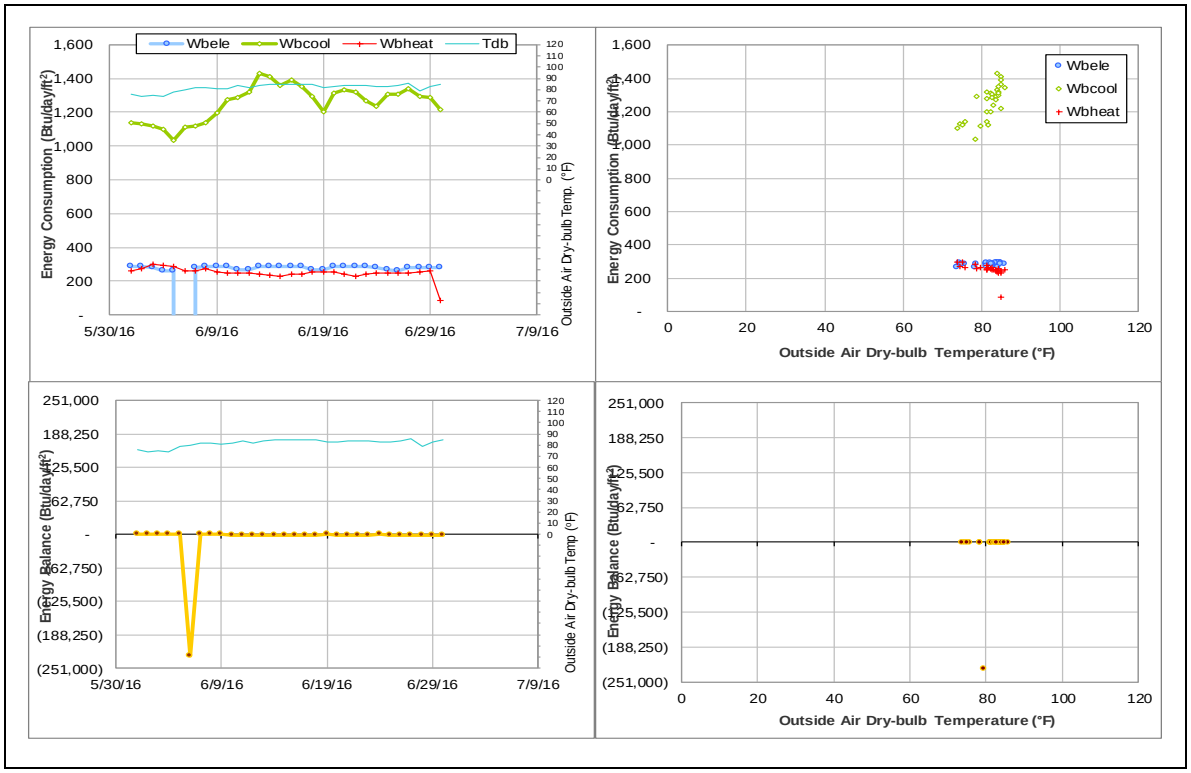
Quantitative descriptions and comments

The cumulative reading was reset on 6/6/2016. The daily consumption was estimated by an average of weekdays in current month.

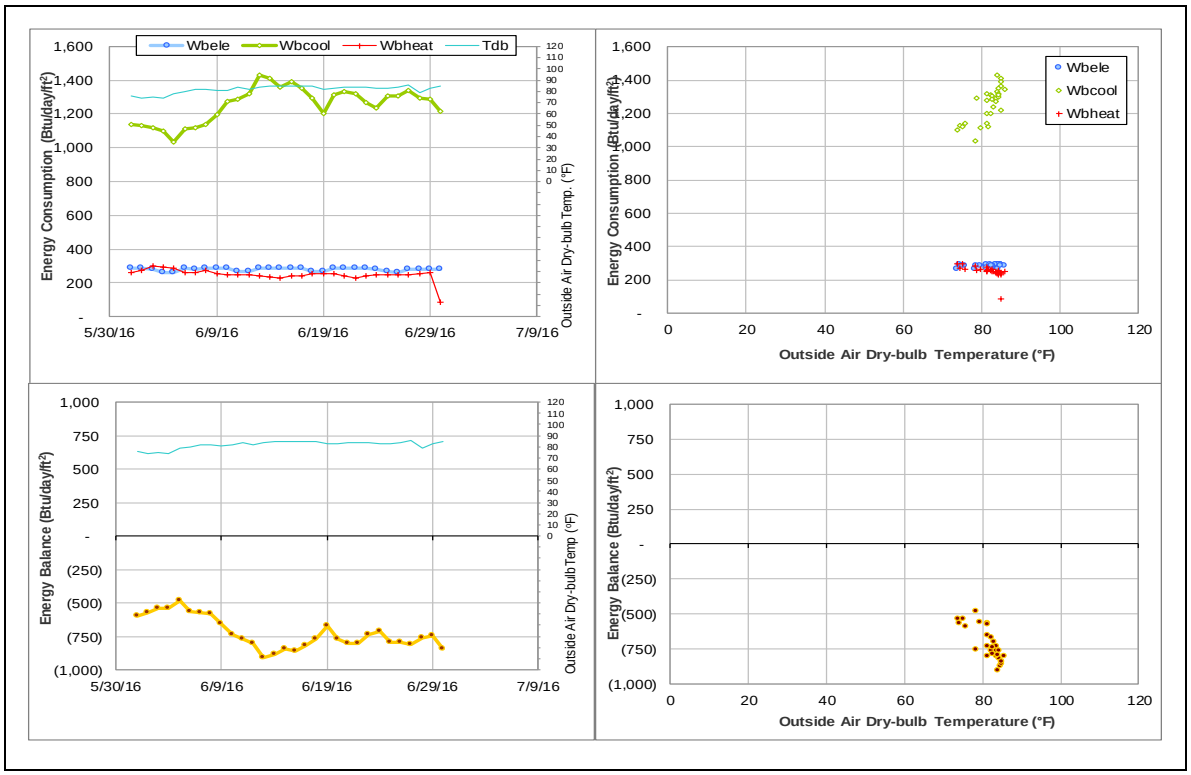
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



II-3 Meters with Significant Issues in Energy Consumption Data

In this section, significant issues in the data behavior are described. On the contrary to the section II–2, alternative consumption is not estimated for some reasons: presence of continuous problems since the beginning of the data acquisition, unbalanced energy uses in the past data, changes in the consumption patterns without evidence of data problems, etc. Table II–3 gives a list of meters included in this section.

Table II-3 Meters with significant issues in the consumption data during June 2016

Building No.	Building Name	MeterID	Type
290	Wells Residence Hall		
		001984	CHW
		001988	HHW
291	Rudder Residence Hall		
		002132	CHW
293	Appelt Residence Hall		
		002062	CHW
		002066	HHW
294	Lechner Residence Hall		
		002285	CHW
		002289	HHW
353	Bright Aerospace Building		
		002746	CHW
		002757	HHW
394	Underwood Residence Hall		
		000014	ELE
412	Moses Residence Hall		
		002384	CHW
433	Mosher Residence Hall		
		009083	ELE
		002489	HHW
446	Rudder Theatre Complex		
		004297	CHW
		004309	HHW
465	Butler Hall		
		004000	CHW
		004004	HHW
467	Biological Sciences Building - East		
		001543	ELE
468	Evans Library		
		003701	CHW
		003895	CHW
		003903	CHW
		003911	CHW
		003712	HHW
		003899	HHW
		003907	HHW
		003922	HHW
		005303	HHW
471	Pavilion		
		002780	HHW

Building No.	Building Name	MeterID	Type
478	Scoates Hall		
		007961	ELE
		007968	CHW
		007969	HHW
496	Utilities & Energy Services Central Office		
		007706	ELE
		006929	CHW
		006933	HHW
499	Engineering Innovation Center		
		002672	CHW
		002683	HHW
506	Nagle Hall		
		001484	ELE
524	Blocker building		
		002918	HHW
880	TVMC-Small Animal Building		
		005962	HHW
1026	Veterinary Medicine Administration		
		006053	HHW
1146	Biological Control Facility		
		005795	ELE
1156	Physical Plant Administration & Shops		
		007679	CHW
1184	Veterinary Anatomic Pathology		
		006999	HHW
1197	Veterinary Research Building		
		006355	ELE
		006359	ELE
1501	Kleberg Center		
		002624	CHW
1559	West Campus Parking Garage		
		004322	CHW
1601	International Ocean Discovery Building		
		006351	ELE
		006382	CHW
		008144	CHW
		008145	HHW
1604	Offshore Technology Research Center		
		006660	ELE
		008142	CHW
		008143	HHW
1611	Engineering Research Building		
		008462	ELE
		008463	CHW
		008467	HHW

Wells Residence Hall (TAMU Bldg #290)

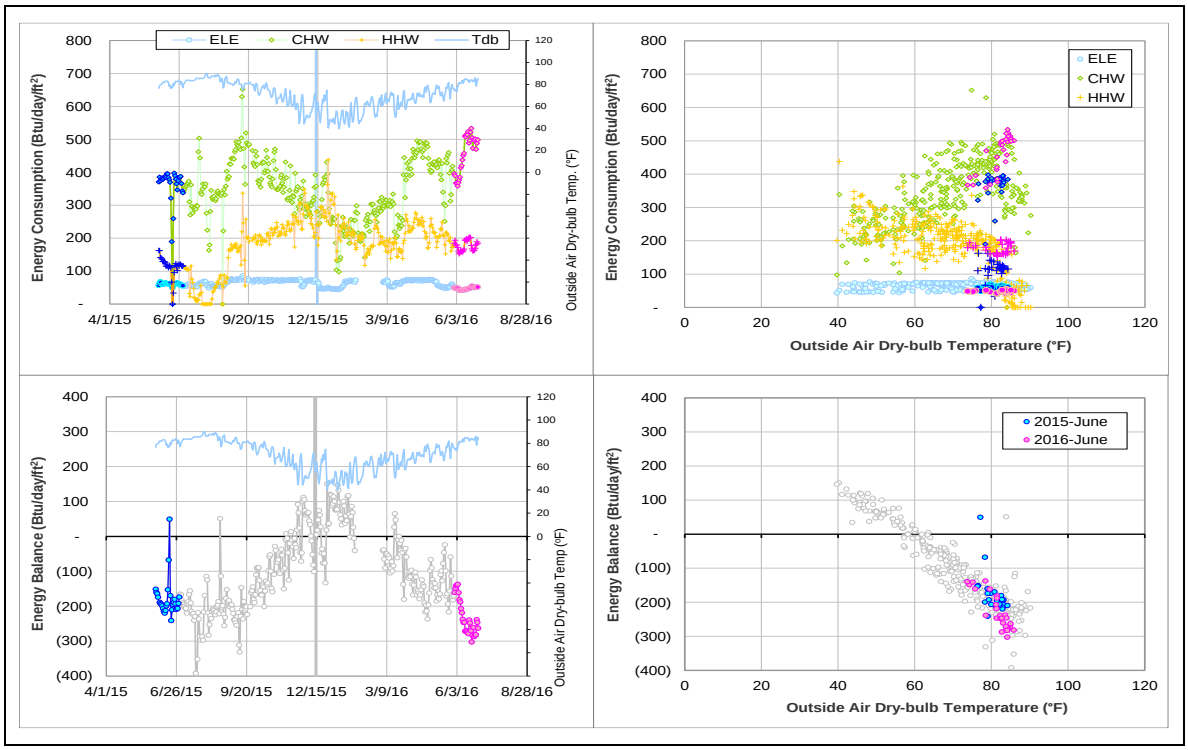
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	Both the CHW and HHW consumption levels are higher than the same month of last year.	Since April 2016

Comments

Both the CHW and HHW consumption increased since the month of April 2016. The CHW/HHW consumption of this month was about 100 Btu/day/ft^2 higher than the same month of last year. This building has a low level of energy balance load with the cross-point temperature around 60°F. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

Explanatory Figure: 13 months energy balance plot with original data



Rudder Residence Hall (TAMU Bldg #291)

Detected issues in the energy balance and/or the consumption data

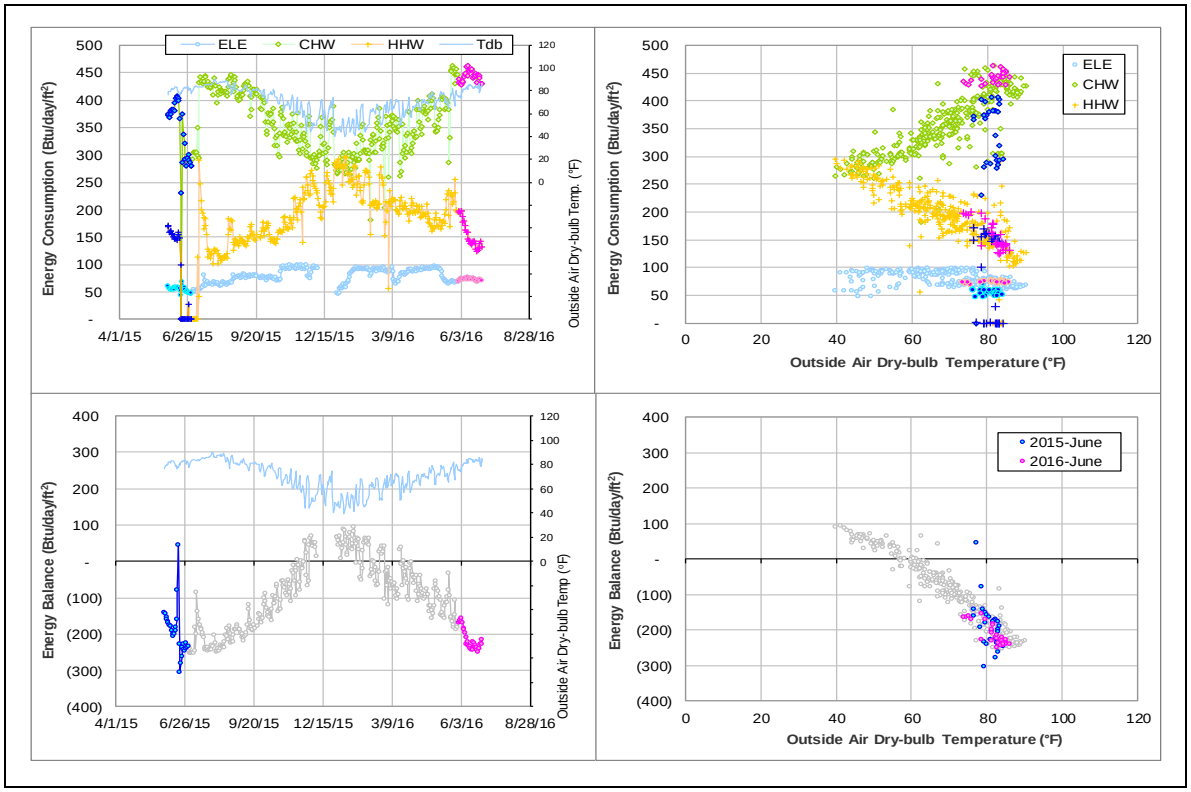
Data Type	Description of data behaviors	Period
Energy Balance	The energy balance level is low. The cross-point temperature is around 60°F.	For several years
CHW	The consumption level has suddenly increased.	Since 5/22/2016

Comments

This building has a low level of energy balance load with the cross-point temperature around 60°F for the past year. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

The CHW consumption increased about 50 Btu/day/ft^2 since 5/22/2016, but the energy balance pattern didn't change much.

Explanatory Figure: 13 months energy balance plot with original data



Appelt Residence Hall (TAMU Bldg #293)

Detected issues in the energy balance and/or the consumption data

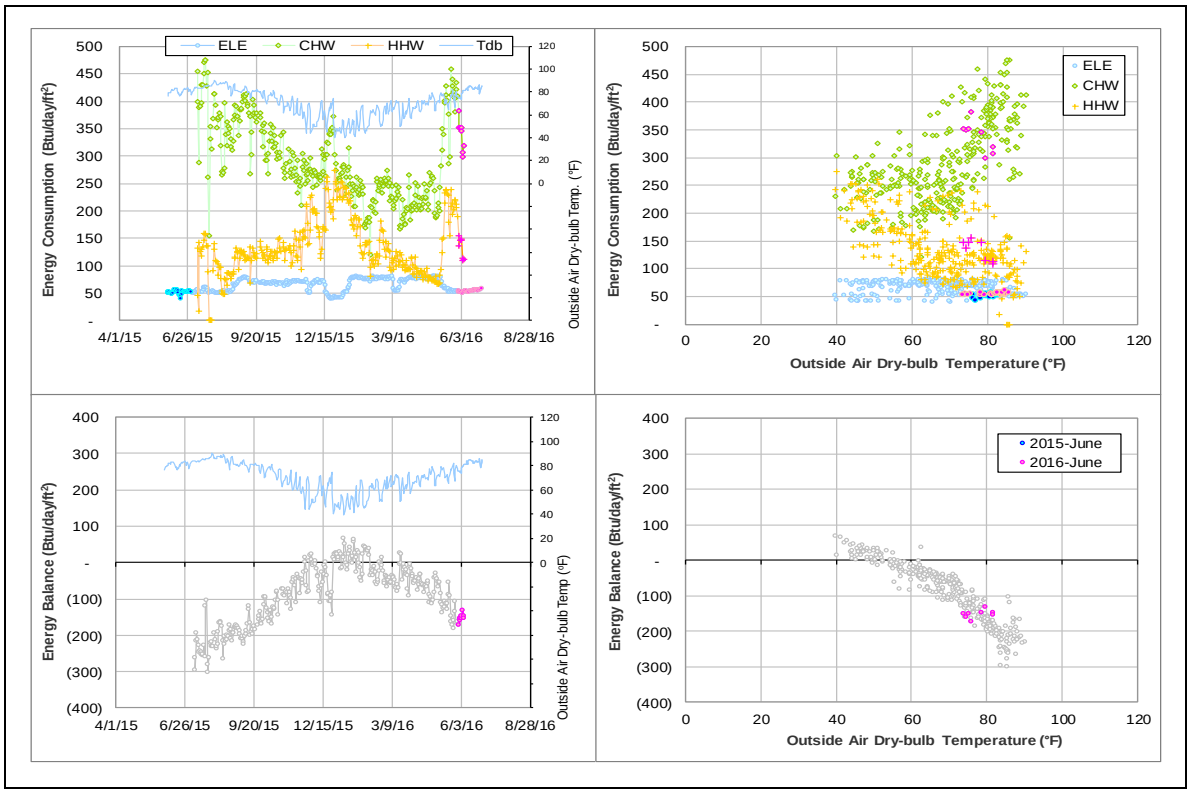
Data Type	Description of data behaviors	Period
CHW	The consumption level suddenly decreased.	Since December 2014
HHW	The consumption gradually decreased.	Since January 2015
Energy Balance	The energy balance decreased and the cross-point temperature is around 55°F.	Since January 2015
CHW/HHW	The consumption level has gradually increased.	Since 5/10/2016
	The consumption level has gradually decreased.	June 2016

Comments

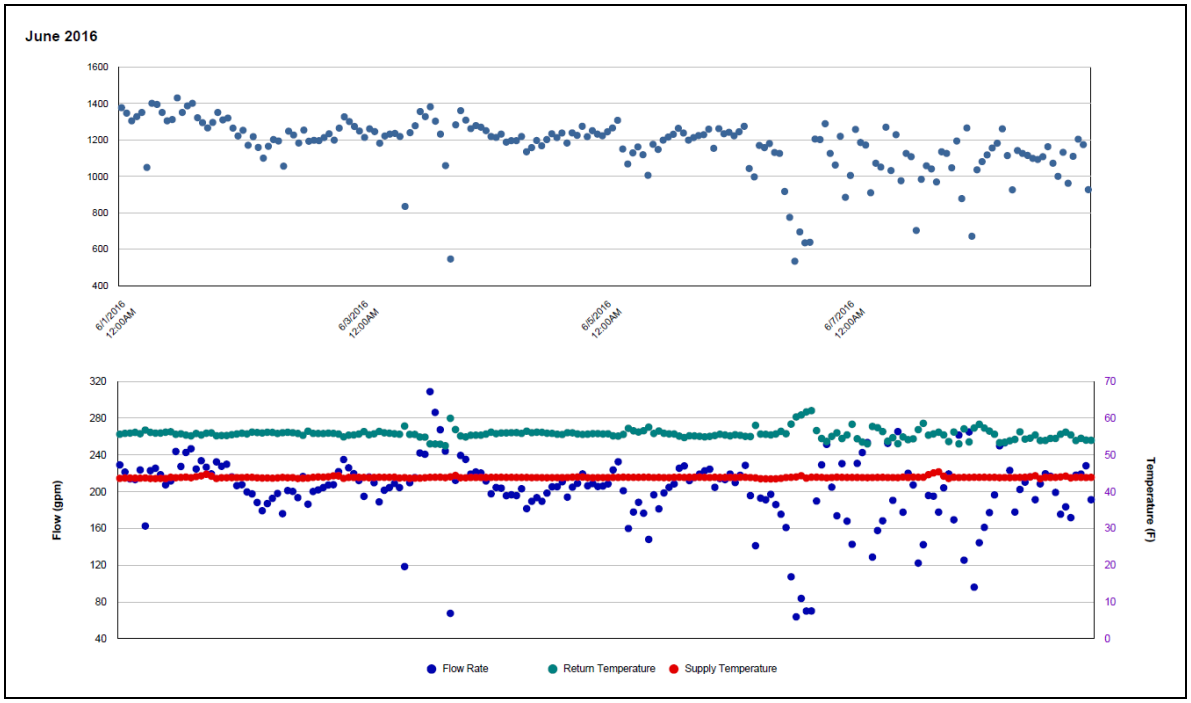
Both the CHW and HHW consumption levels have decreased, respectively. As a result, the energy balance load was low with the cross-point temperature around 55°F. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

Both the CHW and HHW consumption gradually increased by 150 Btu/day/ft^2 starting from 5/10/2016, as the CHW and HHW flow rates gradually increased by 140 gpm, respectively. In this month, both consumptions gradually decreased. However, the energy balance pattern didn't change much all the time.

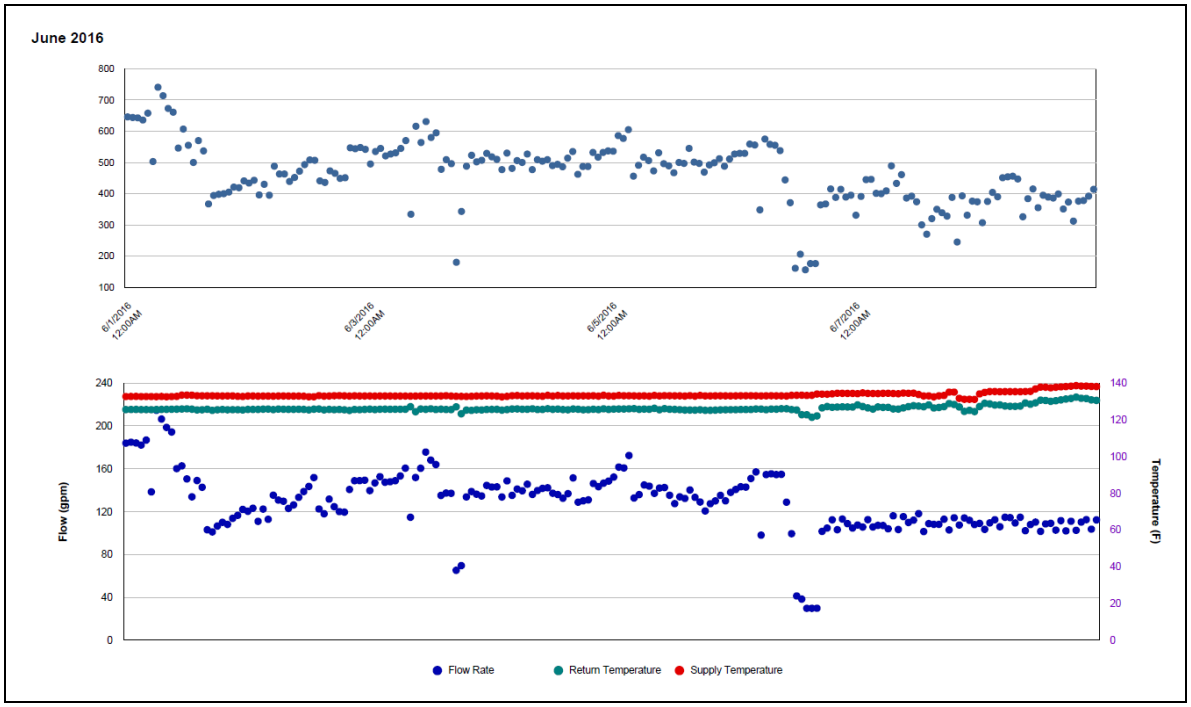
Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during June 2016)



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during June 2016)



Lechner Residence Hall (TAMU Bldg #294)

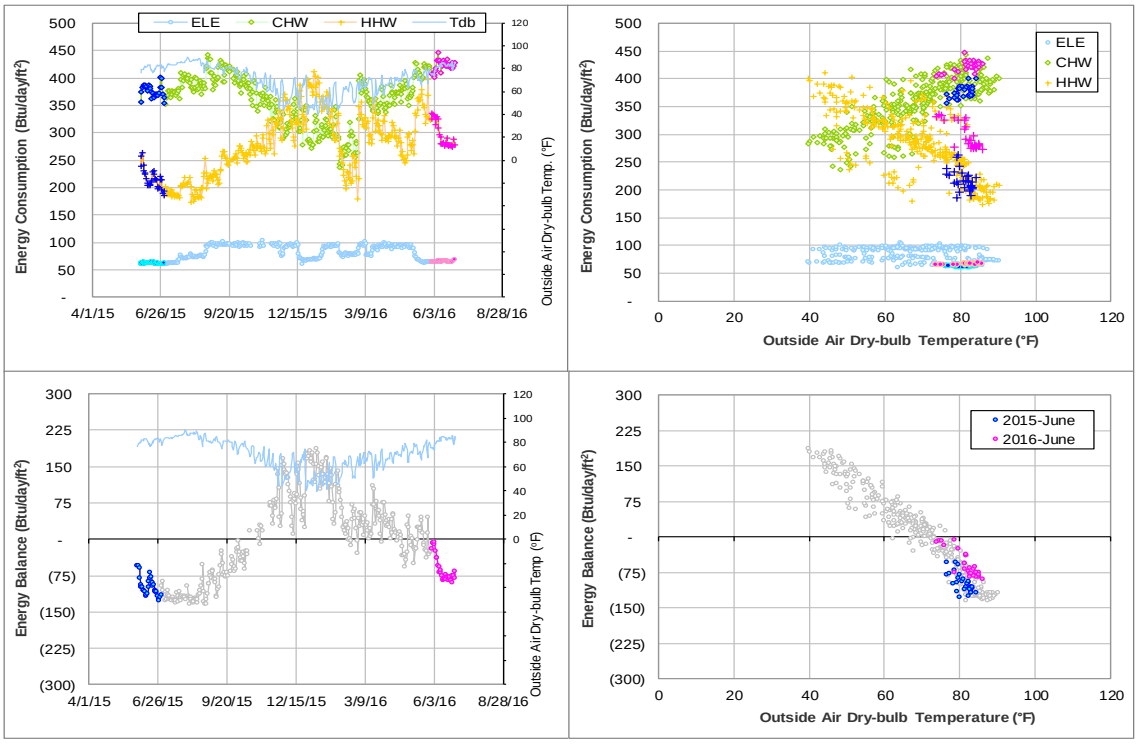
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	The consumption level has gradually increased.	Since 5/11/2016

Comments

Since 5/11/2016, the CHW and HHW consumption have increased by 50 Btu/day/ft^2 and 80 Btu/day/ft^2, respectively. The energy balance increased a little, with the cross point temperature around 75 °F.

Explanatory Figure: 13 months energy balance plot with original data



Bright Building (TAMU Bldg #353)

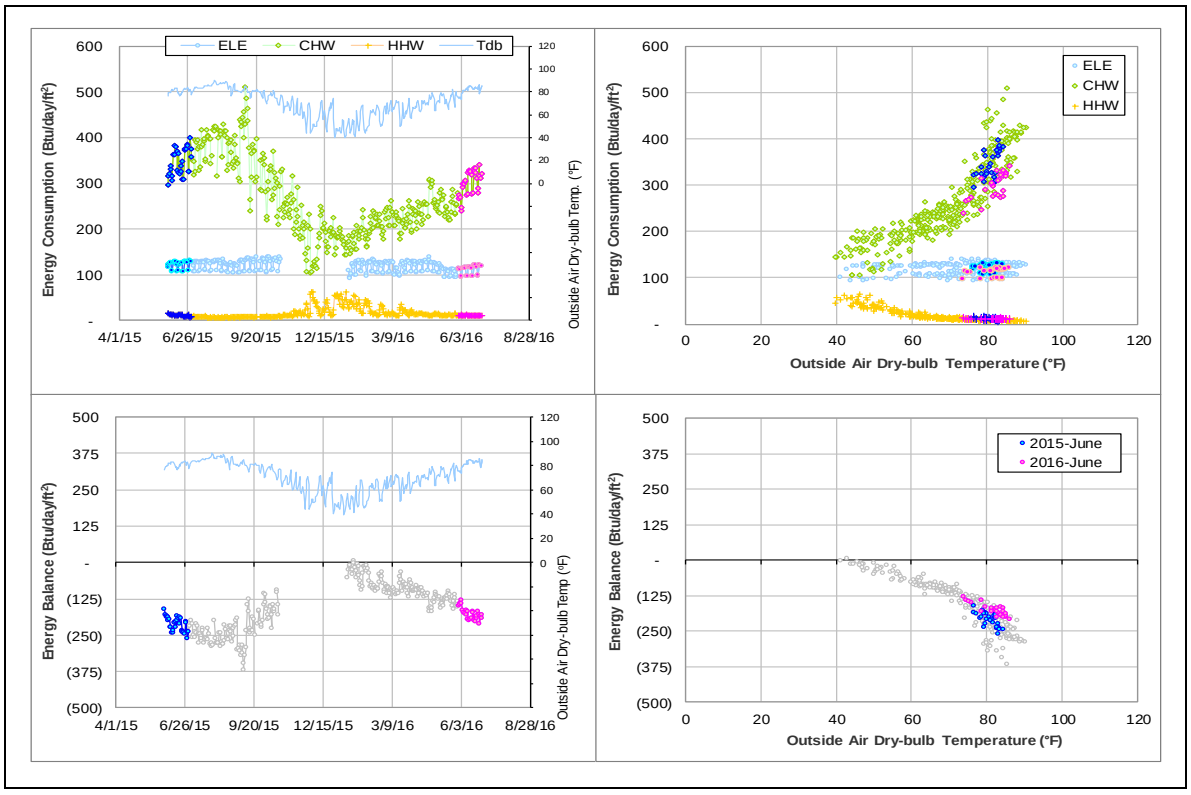
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The energy balance level has been low for years. The cross-point temperature was in the range of 40 - 70 °F.	For several years

Comments

The energy balance load (E_{BL}) of this building has varied but always been low (the cross-point temperature was between 40°F and 70°F) for years. In the past 12 months, the cross-point temperature was around 50°F. The electricity use level was in a typical range for office and classroom buildings on campus. Therefore, either CHW or HHW consumption might be causing the unbalanced energy balance in the building.

Explanatory Figure: 13 months energy balance plot with original data



Underwood Hall (TAMU BLDG # 394)

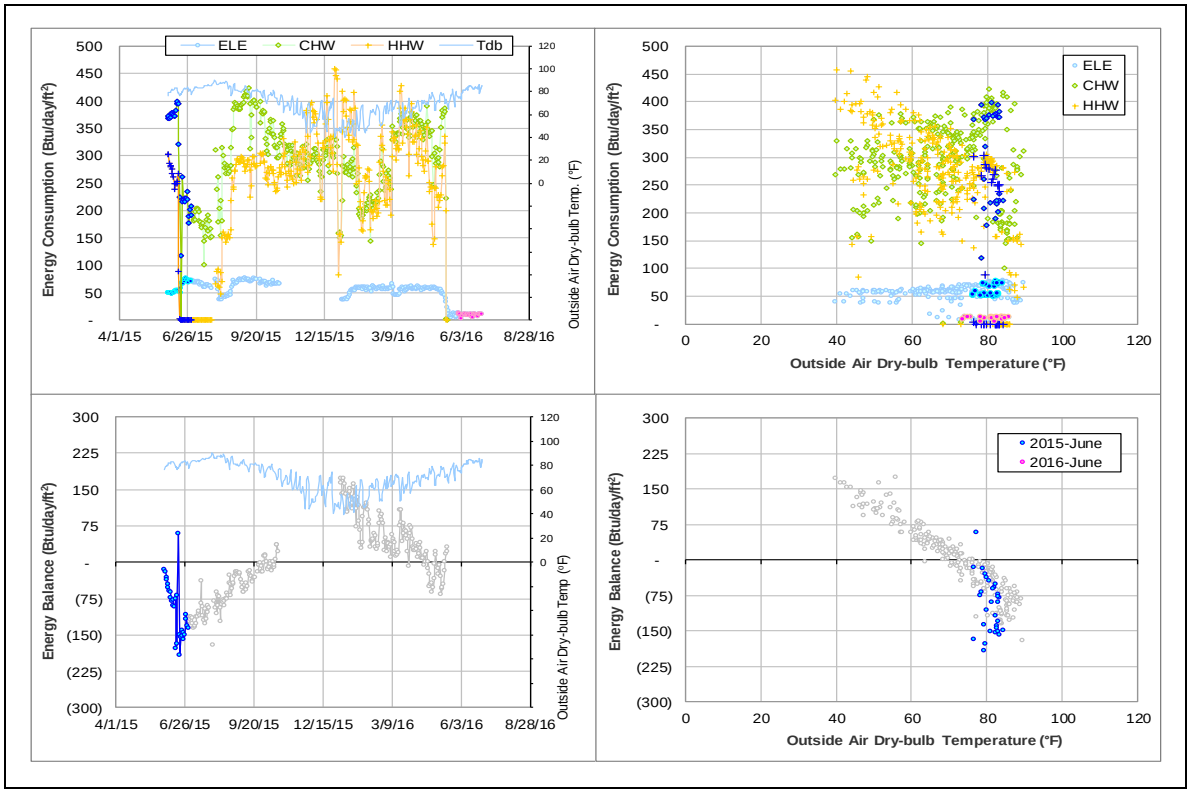
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption gradually decreased.	Since middle of May 2016

Comments

There was no consumption for CHW and HHW since May 2016, because the HVAC system has been under renovation. The ELE consumption gradually decreased by 50 Btu/day/ft^2 (75%) during the middle of May 2016. The decrease of the ELE use could be related to the renovation.

Explanatory Figure: 13 months energy balance plot with original data



Moses Residence Hall (TAMU BLDG # 412)

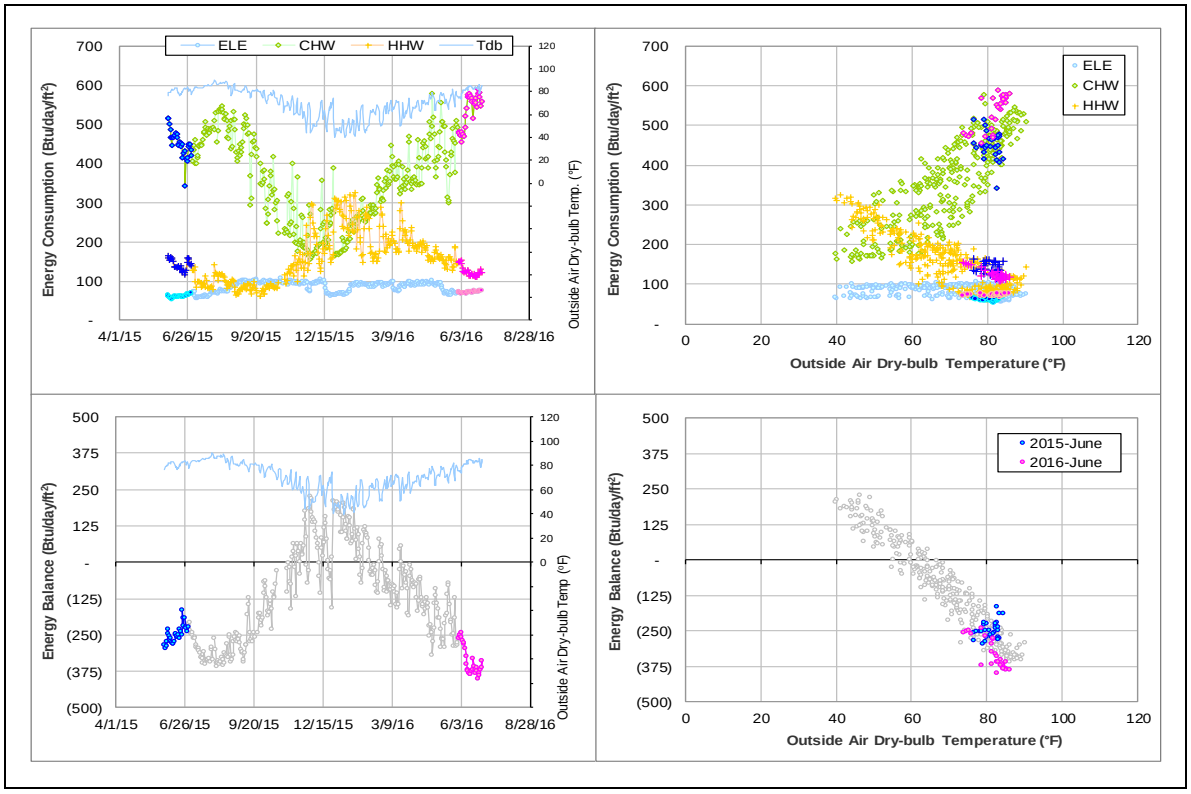
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level was higher than the same month of last year.	Since March 2016
Energy Balance	The energy balance decreased and the cross-point temperature was around 55°F.	Since March 2016

Comments

The CHW consumption was about 80 Btu/day/ft^2 higher than the same month of the last year since March 2016, which resulted the lower energy balance with the cross-point temperature decreased from 65°F to 55°F.

Explanatory Figure: 13 months energy balance plot with original data



Mosher Residence Hall (TAMU BLDG # 433)

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption level suddenly decreased.	Since 1/23/2016
ELE	The consumption gradually decreased.	Sin middle of May 2016
HHW	The consumption gradually increased.	Sin middle of May 2016

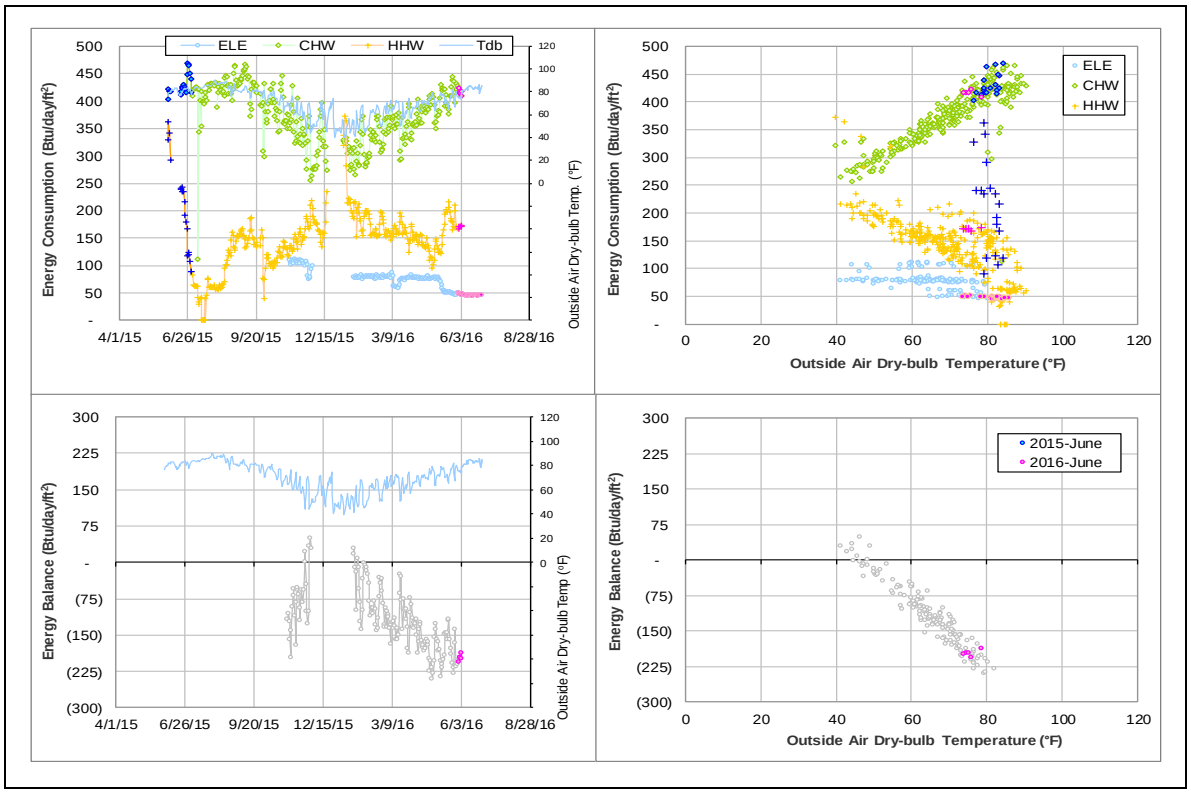
Comments

The cross-point temperature for this building was around 55°F before March 2015. CHW consumption increased 50- 100 Btu/day/ft^2 due to an increase of flow rate after March 2015 and the pattern was stable over one year. As a result, the cross-point temperature decreased from ~ 55°F to ~50°F.

The ELE meter (MID 009083) replaced old meter (MID 000290) since January 2016. After that, the consumption decreased from ~105 Btu/day/ft^2 to ~80 Btu/day/ft^2 (approximately 25%). The CHW and HHW consumption levels didn't changed. The cross-point temperature was further decreased and it is lower than 50°F now. It is suggested to investigate this meter.

In the middle of May 2016, the ELE further decreased to 50 Btu/day/ft^2 and the HHW consumption increased by 50 Btu/day/ft^2. However, the energy balance pattern didn't change.

Explanatory Figure: 13 months energy balance plot with original data



Rudder Theatre Complex (TAMU BLDG # 446)

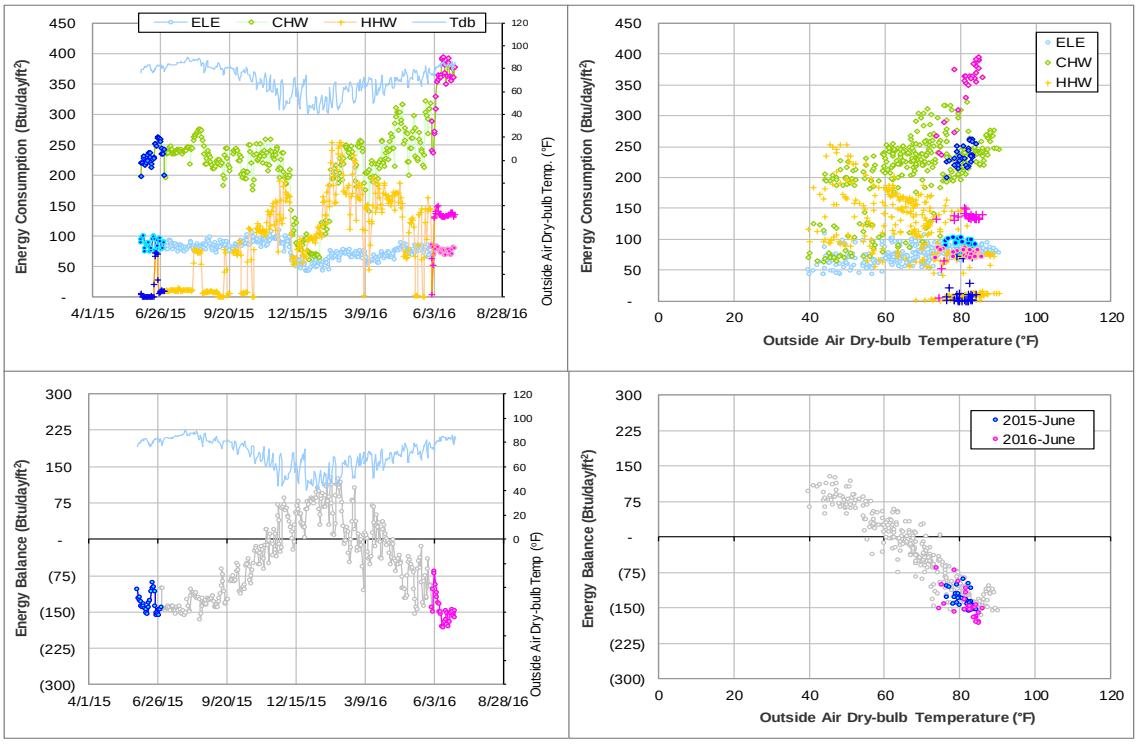
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	The consumption has increased, and was higher than the same month of last year.	Since June 2016

Comments

The CHW and HHW consumption has increased and was about 120 But/day/ft^2 higher than the same month of last year. However, the energy balance pattern didn't change.

Explanatory Figure: 13 months energy balance plot with original data



Butler Hall (TAMU Bldg #465)

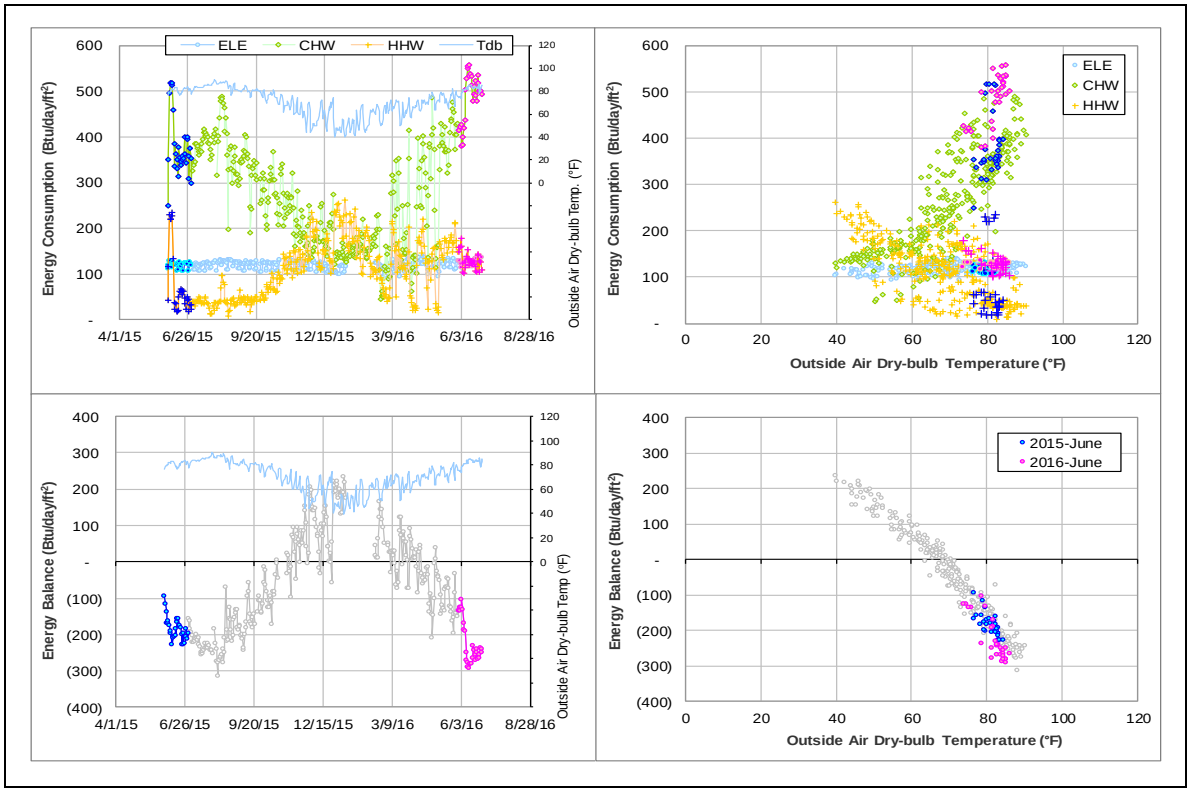
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	The consumption level has suddenly increased and varied frequently.	Since 3/8/2016

Comments

Both the CHW and HHW consumption has suddenly increased about 100 Btu/day/ft^2 since 3/8/2016, and the consumption varied frequently. However, the energy balance pattern was still at a reasonable range, and the cross point temperature was around 65°F.

Explanatory Figure: 13 months energy balance plot with original data



Biological Sciences Building – East (TAMU Bldg # 467)

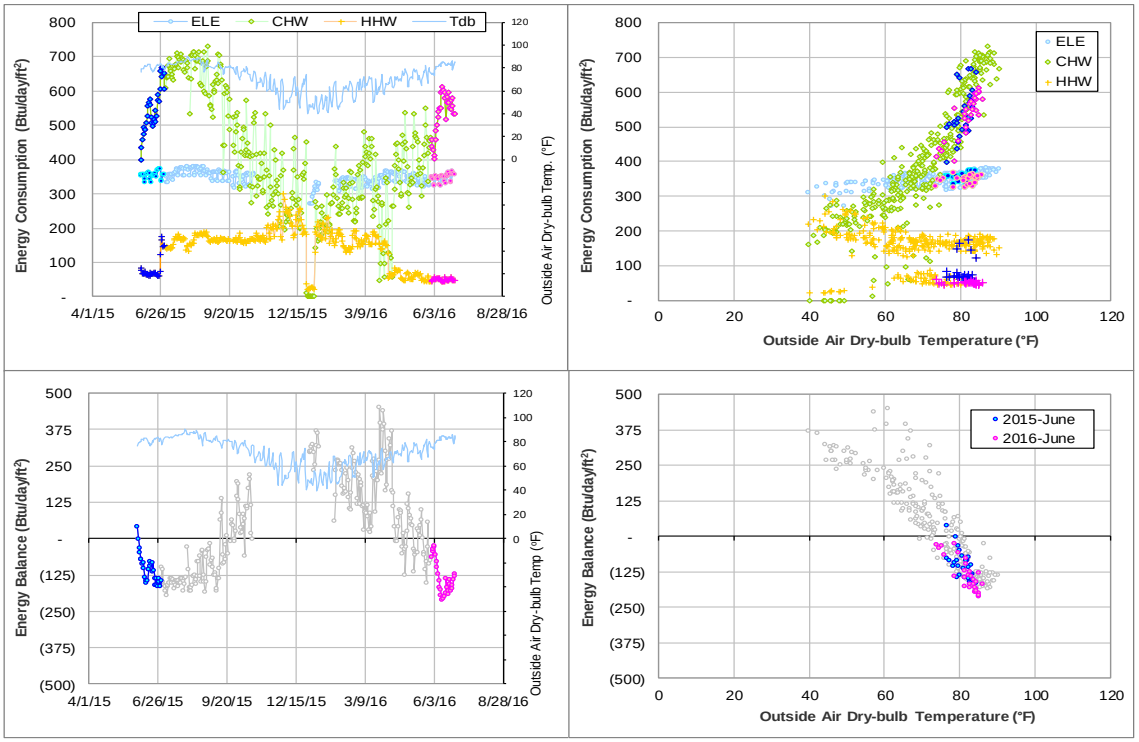
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption level may be high.	1/2/2013–ongoing

Comments

The ELE consumption suddenly increased after 1/2/2013 by approximately 100 Btu/day/ft^2. There was a power outage in the building right before this increase. The CHW and HHW consumption levels did not change. The increased ELE usage level was in the range 290 - 390 Btu/day/ft^2 for the last year, which was higher than those for other buildings with similar functionality. For example, the ELE use range in the adjacent Biological Sciences Building – West (Bldg 449) was 190 –250 Btu/day/ft^2 during the same time period. These buildings have similar CHW and HHW consumption levels. The energy balance load after the ELE increase was higher than expected range by approximately 120 Btu/day/ft^2. The increase of the ELE use in Biological Sciences Building – East after 1/2/2013 was questionable and this meter needs attention.

Explanatory Figure: 13 months energy balance plot with original data



Evans Library (TAMU BLDG # 468)

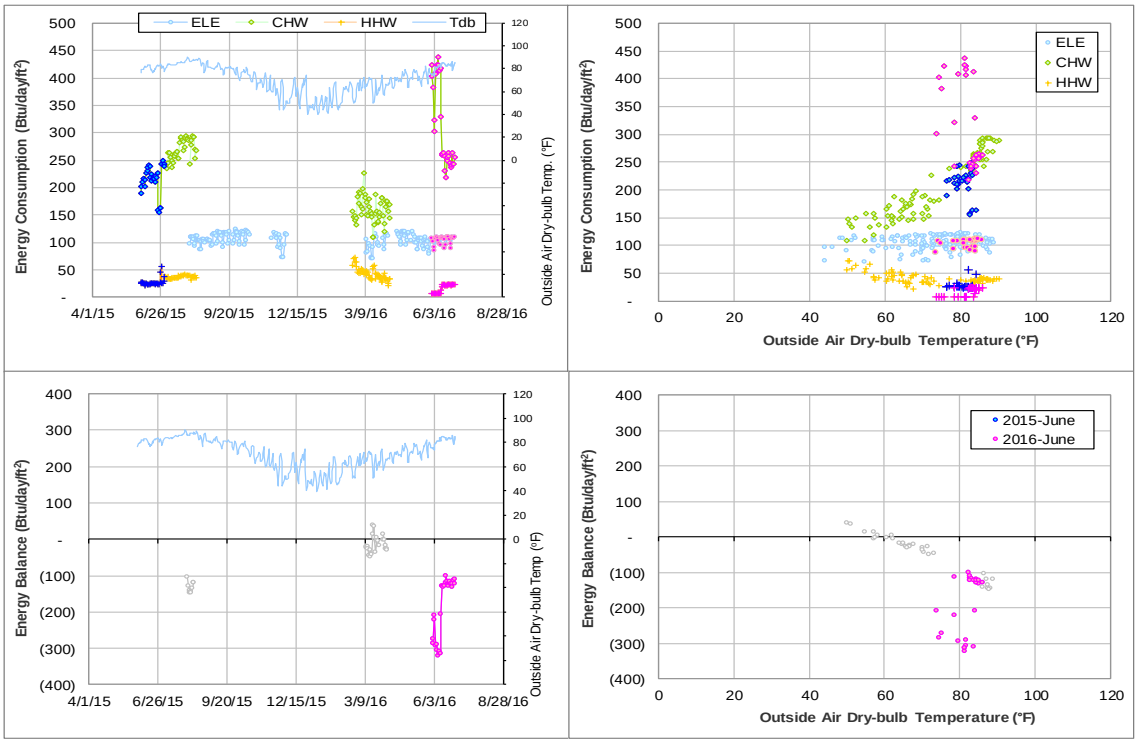
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature was low.	2/23/2016–ongoing

Comments

CHW includes 4 meters and HHW includes 5 meters. For years, the meters reading consumption varied year by year, but the total CHW or HHW use followed reasonable trends. The energy balance decreased gradually for years, and it was a little low after 2/23/2016 with the cross-point temperature around 60°F.

Explanatory Figure: 13 months energy balance plot with original data



Pavilion (TAMU Bldg #471)

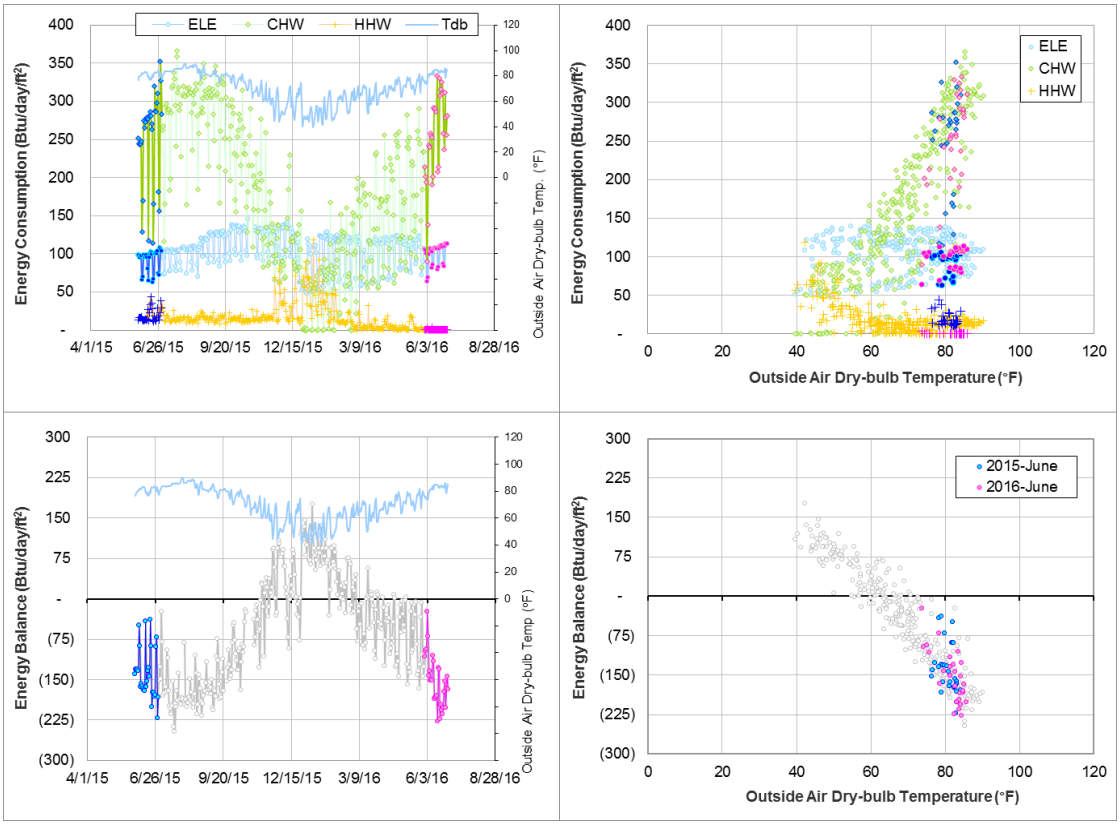
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Drop in HHW flow.	3/2/2016 – ongoing

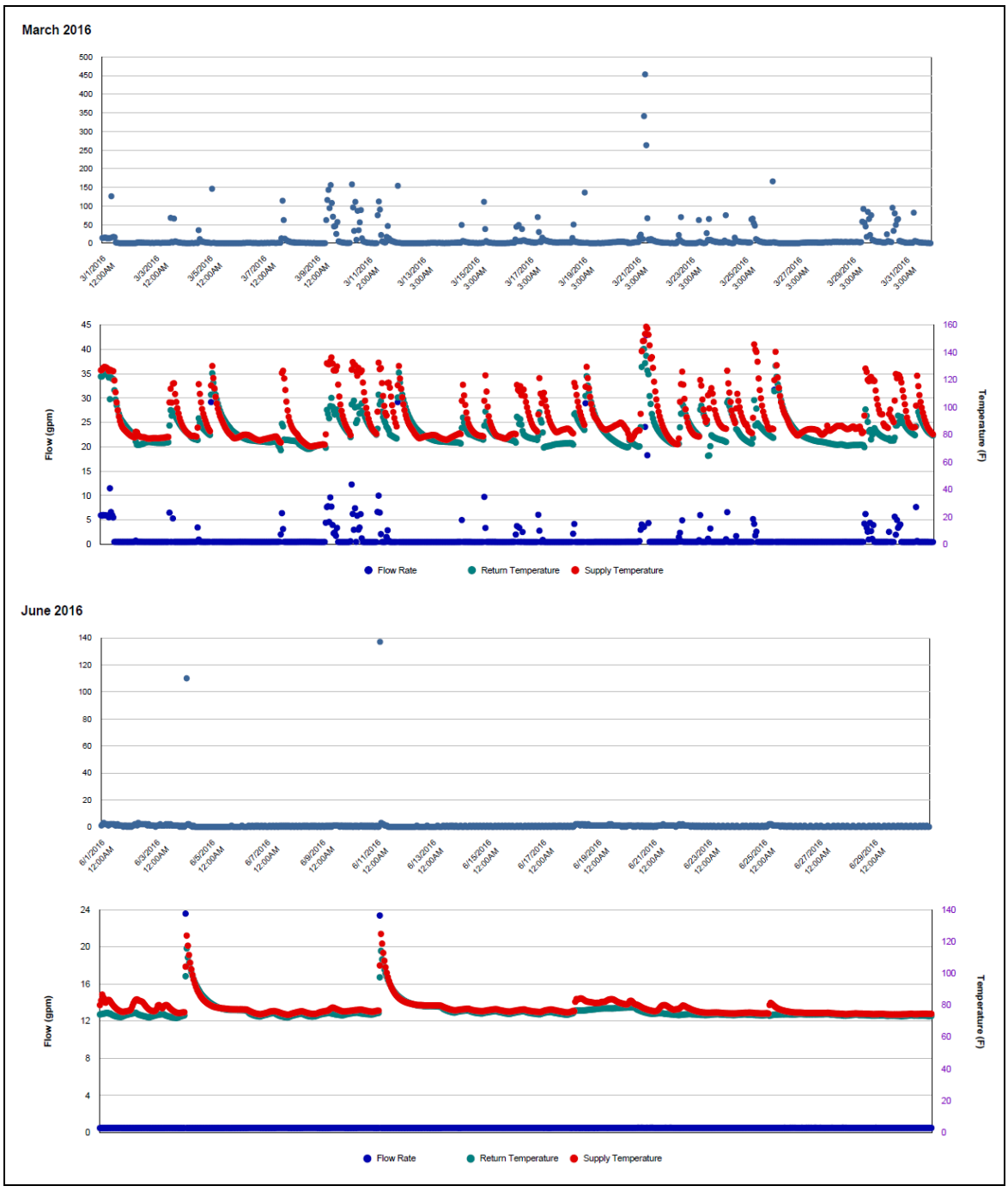
Quantitative descriptions and comments

Prior to March 2016, the HHW minimum flow ranged around 6 gpm. Starting March 2, 2016 the HHW minimum flow dropped to around 0 gpm. The HHW might not to be actually used during summer.

Explanatory Figure: 13 months energy balance plot with original data.



Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office for March 2016 (above) and June 2016 (below). The March plot shows the drop in flow around the 2nd.



Scoates Hall (TAMU Bldg #478)

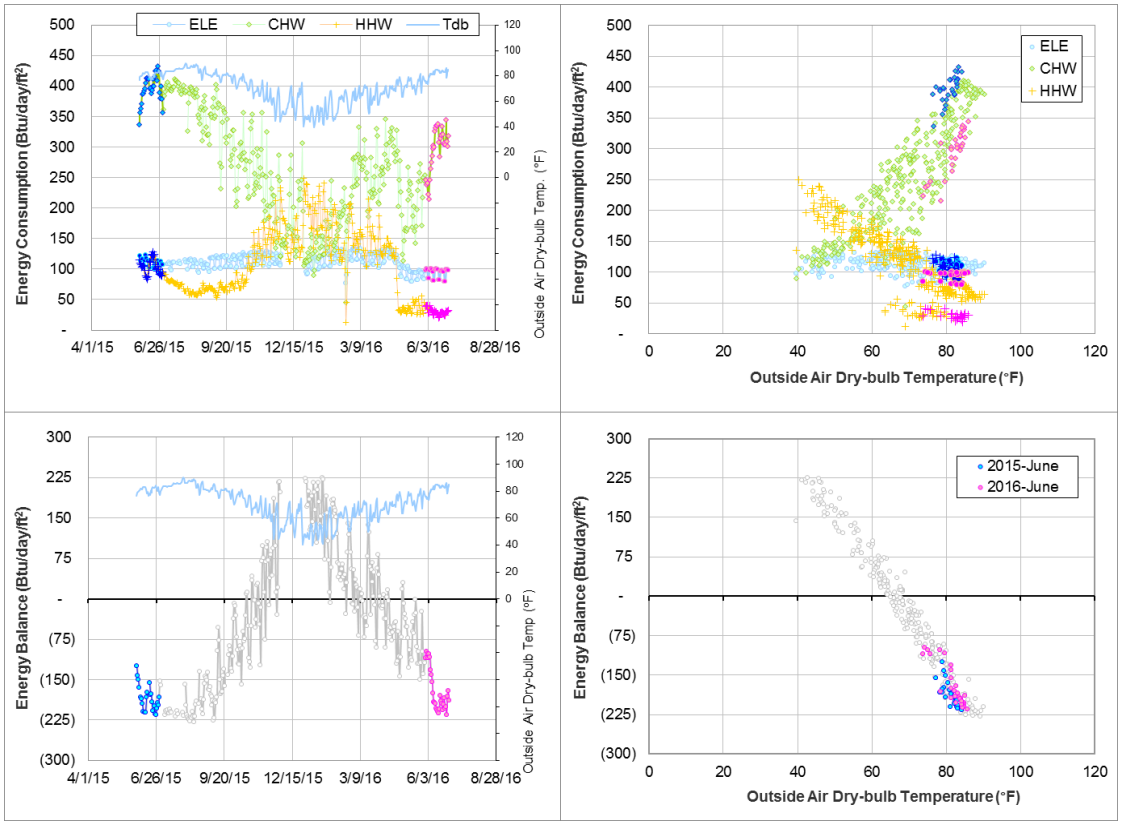
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE, CHW, and HHW	The consumption level has significantly decreased.	4/26/2016 – on going

Quantitative descriptions and comments

ELE, CHW, and HHW all saw a significant decrease in consumption starting since 4/26/2016. Since the energy balance plot has retained its pattern, the drop may be due to a decrease in usage that is associated with the end of the spring semester.

Explanatory Figure: 13 months energy balance plot with original data.



Utilities & Energy Services Central Office (TAMU Bldg #496)

Detected issues in the energy balance and/or the consumption data

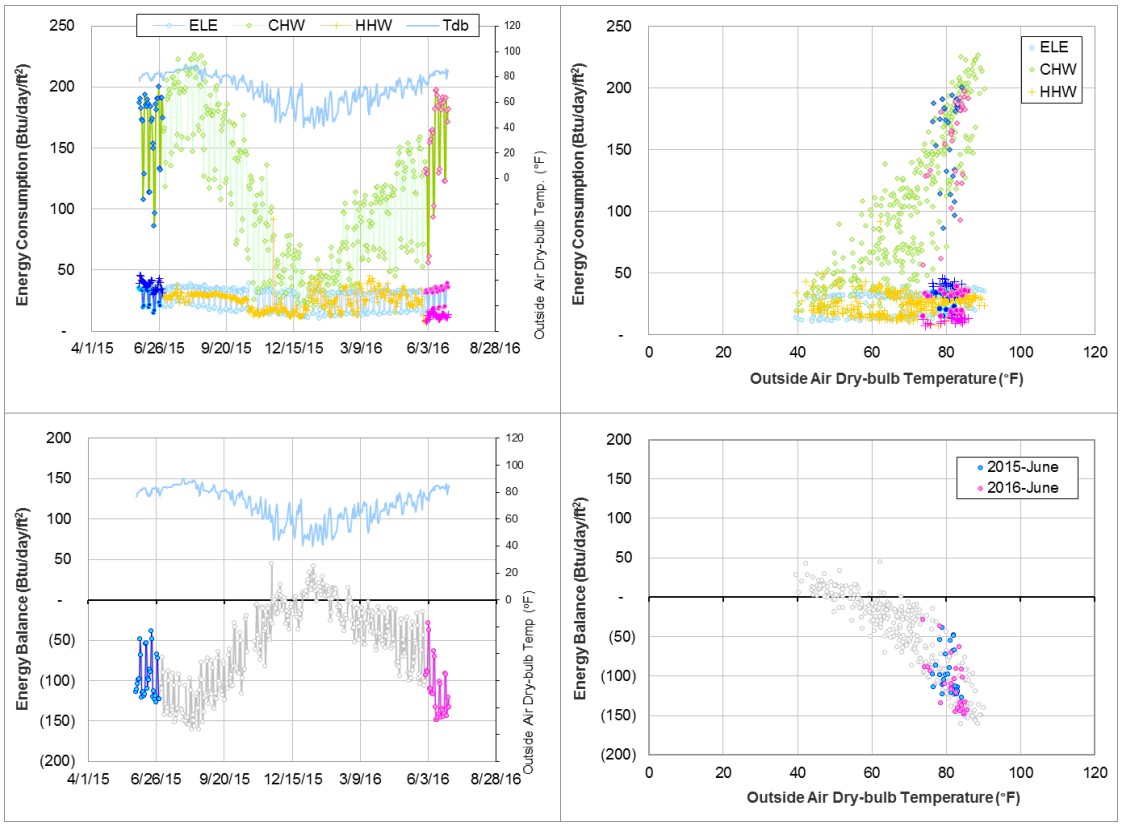
Data Type	Description of data behaviors	Period
ELE, CHW, and HHW	The energy use per unit floor area was low compared to other buildings.	Since the data became available on 7/1/2012

Quantitative descriptions and comments

The peak electricity use density was around 0.65 W/ft^2 which is small compared to that of other office buildings on campus. The delta T for HHW seemed to be small for years. The CHW and HHW consumption per the unit floor area also seemed to be low. It is possible that the GSF we have (46,110 ft^2) includes substantial unoccupied space.

The energy balance was scattered due to the consumption level changes for CHW and HHW, the cross-point temperature of the energy balance was ranged around 50 to 70°F.

Explanatory Figure: 13 months energy balance plot with original data.



Engineering Innovation Center (TAMU Bldg # 499)

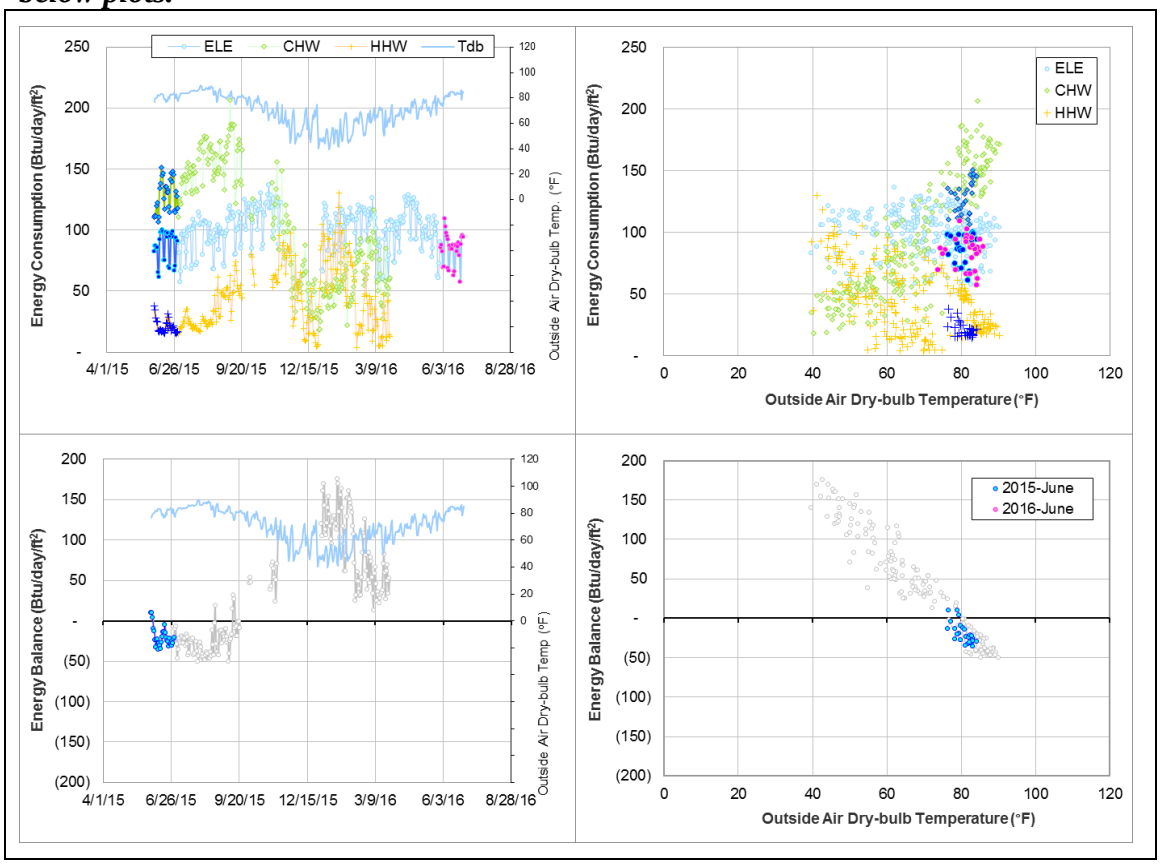
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is high.	For years
CHW	The consumption level is low compared to the ELE and HHW consumption.	For years
HHW	The consumption was lower than the same period of last year.	Since December 2015

Comments

The cross-point temperature of the energy balance is around 80°F. The CHW consumption is relatively low and its delta T is always small. The HHW consumption since December 2015 is much lower than the same month of last year (about 100 Btu/day/ft^2 lower).

Explanatory Figure: 13 months energy balance plot with original data. CHW and HHW data is not available for the months of April – June and do not appear in the below plots.



Nagle Hall (TAMU Bldg #506)

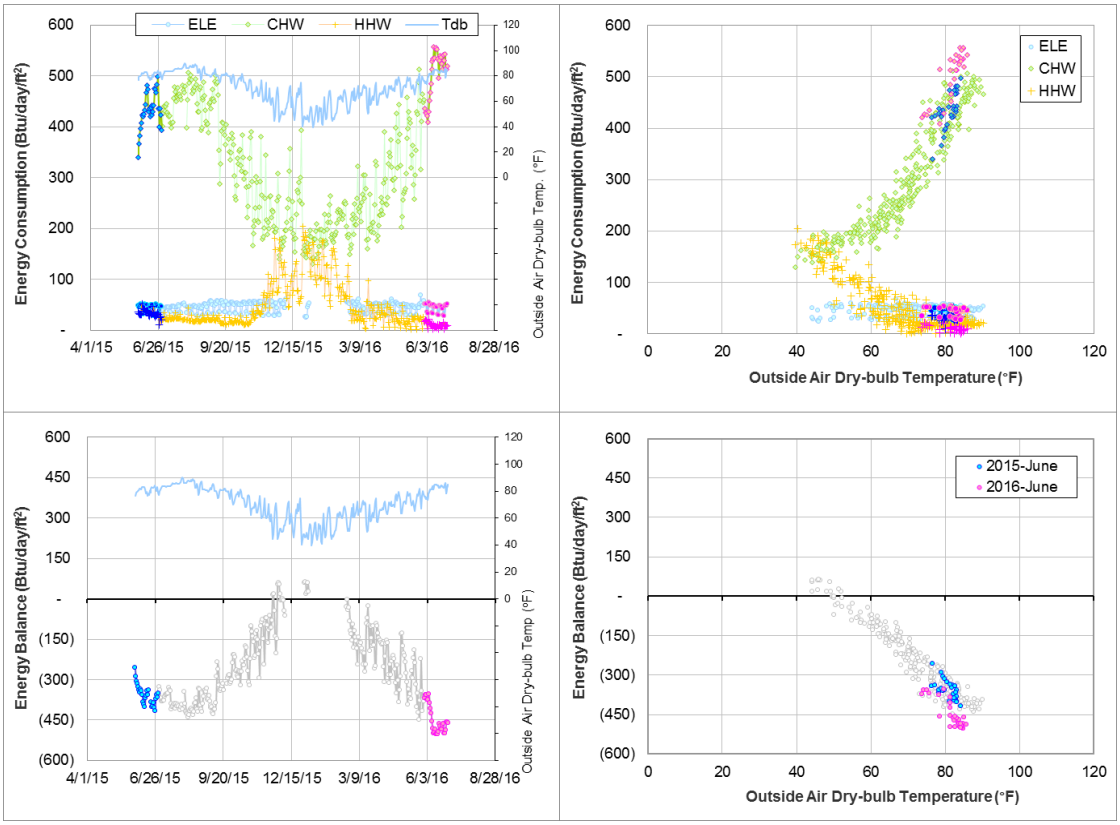
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The level was low and the cross-point temperature was around 50°F.	The cross-point temperature has always been low.
ELE	The consumption per unit floor area was smaller than those for other office buildings.	The level was always low and gradually decreased over the past 4 years.

Comments

The ELE consumption was about 100 Btu/day/ft^2 lower than the levels in typical office buildings on campus, and this might be a metering error or this meter might not cover the whole building.

Explanatory Figure: 13 months energy balance plot with original data



Blocker Building (TAMU Bldg #524)

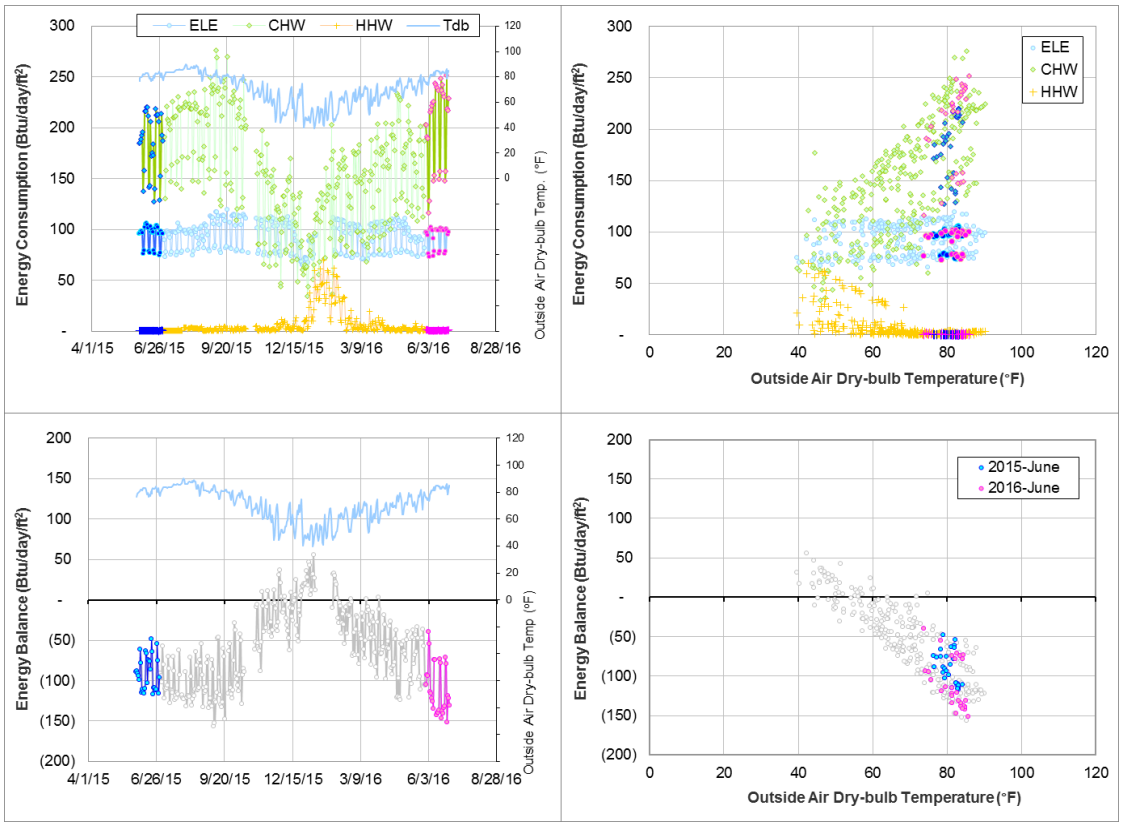
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level might be low.	Past several years

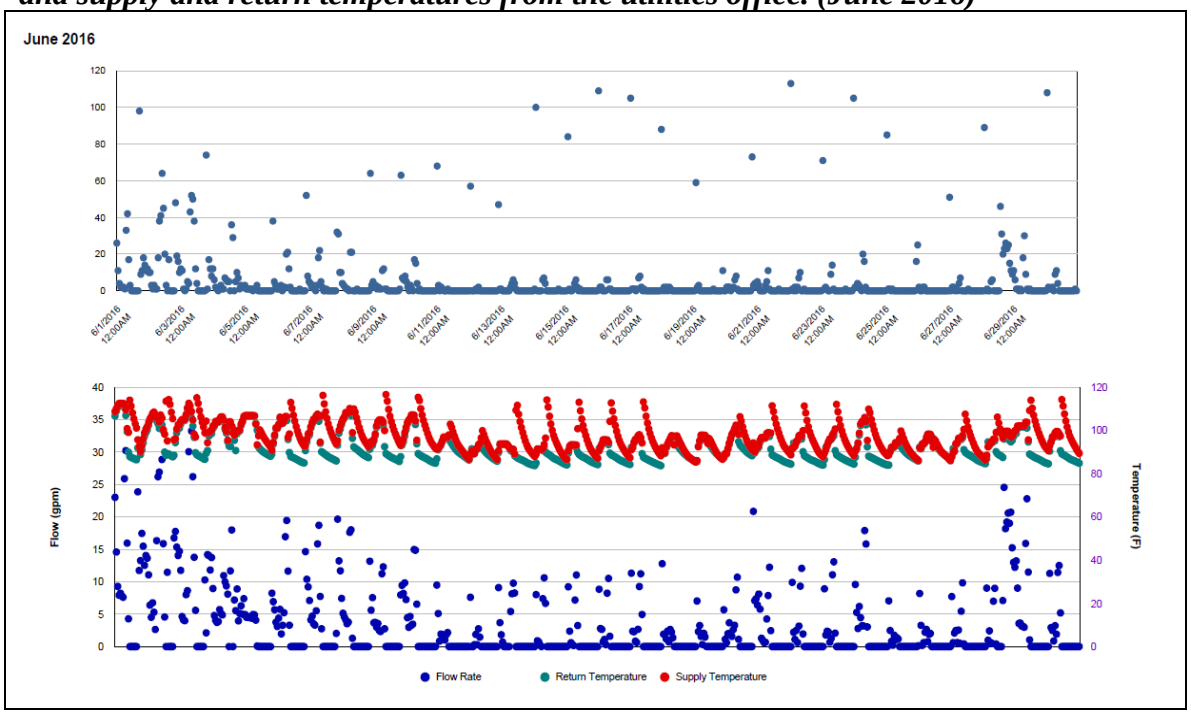
Quantitative descriptions and comments

The delta T and consumption level for HHW seems low for the past couple of years.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. (June 2016)



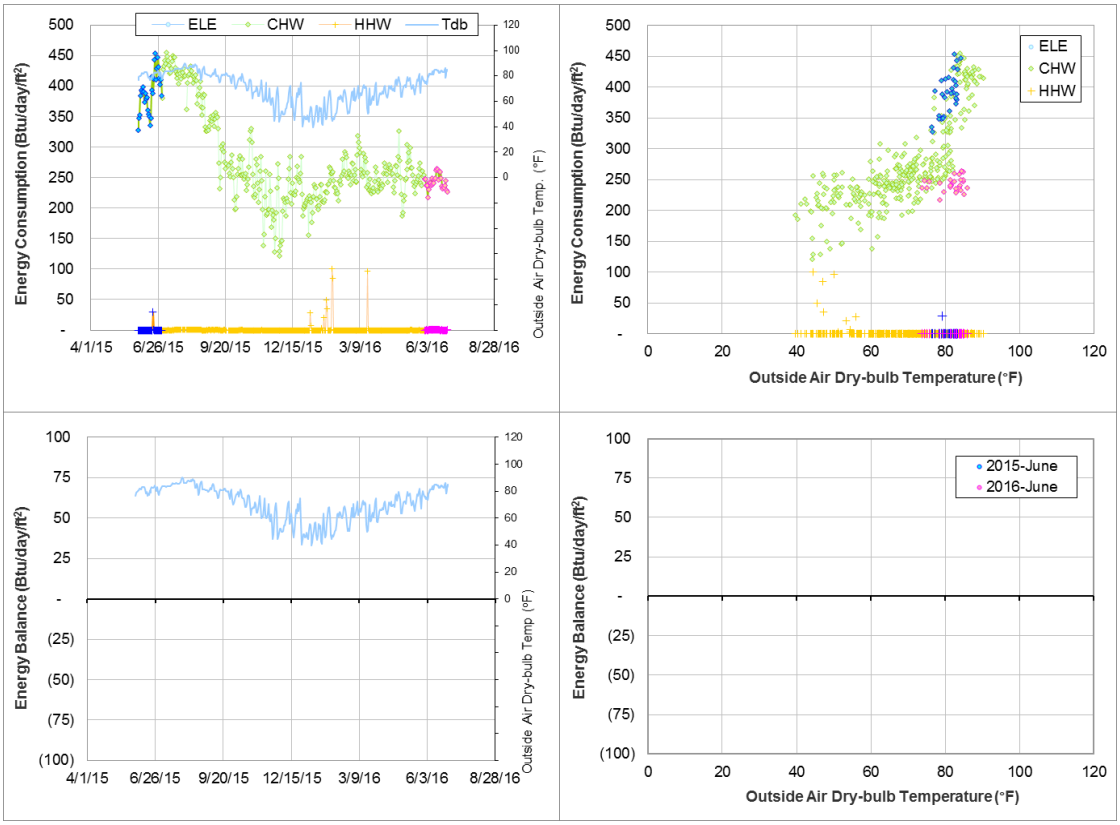
TVMC-Small Animal Building (TAMU Bldg# 880)

Data Type	Description of data behaviors	Period
HHW	The daily consumption is zero or nearly zero for the majority of the days during the year.	Since the data became available in October 2008

Comments

The daily HHW consumption pattern is zero or nearly zero for the majority of the days for years. Because the HHW consumption level appears unstable since the data became available, a valid consumption model for this meter has not been created.

Explanatory Figure: 13 months energy balance plot with original data



Veterinary Medicine Administration (TAMU Bldg# 1026)

Detected issues in the energy balance and/or the consumption data

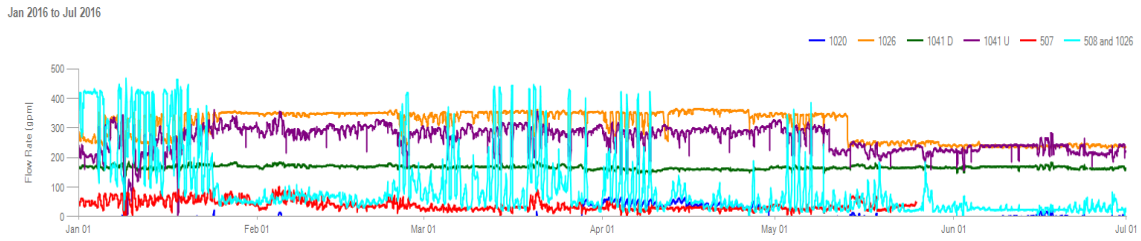
Data Type	Description of data behaviors	Period
HHW 006053	The sub-meter's (006053) flow rate for one building sometimes is higher than the total meter (004170) for two buildings.	For several years

Comments

The HHW meter ID 006053 is a sub-meter of the meter ID 004170 which meters the total energy use in the buildings #508 and 1026. It is questionable that the flow rate of the sub-meter exceeds the flow rate of the main meter. We would like to know the HHW distribution route for the two buildings and the locations of the sensors.

ESL has not received the consumption data for the HHW meter since 10/21/2012.

Explanatory Figure: Time series of hourly HHW flow rates for Veterinary Medicine Administration (Bldg #1026) and neighboring buildings during 1/1/2015–7/1/2016. The combined HHW metered for Bldg #1026 and #508 (light blue) is lower than the standalone HHW meter for only Bldg #1026 (dark blue).



Biological Control Facility (TAMU Bldg# 1146)

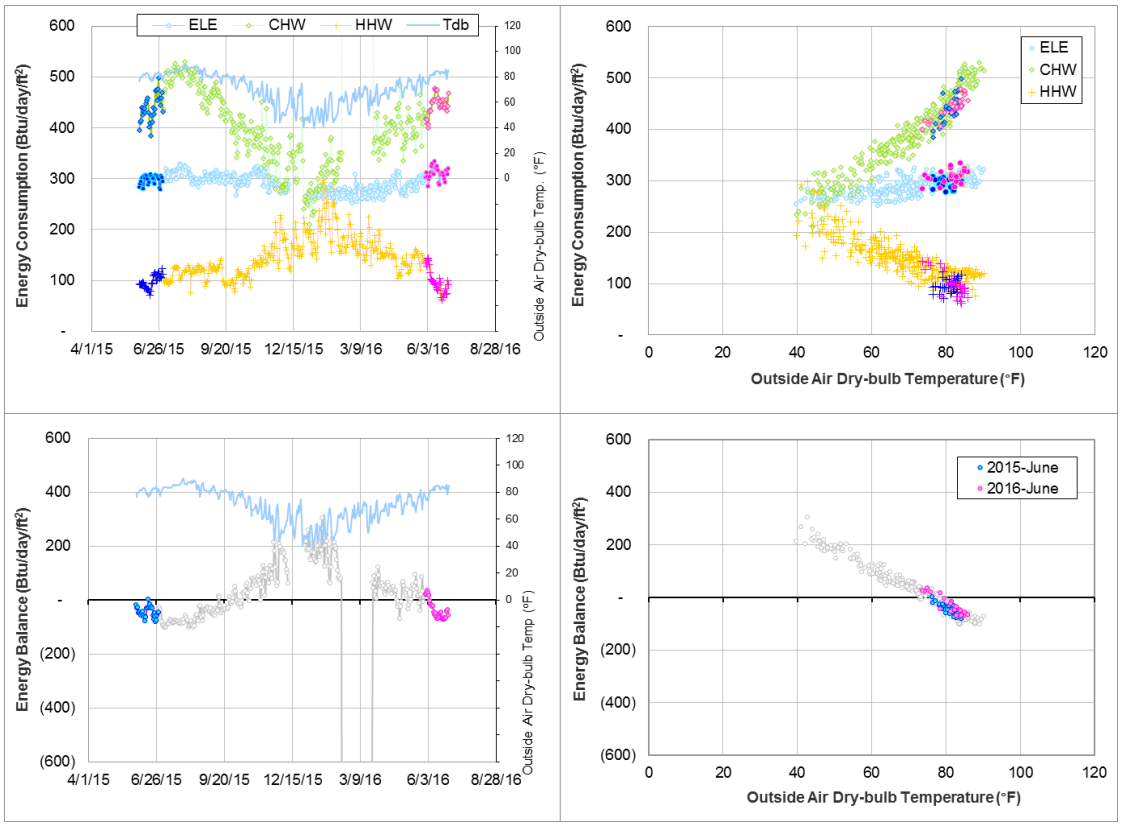
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is slightly high, ~75°F.	12/28/2014-ongoing
ELE	The consumption increased gradually.	For several years

Comments

The electricity consumption increased gradually over several years. As a result, the energy balance pattern changed and the cross-point temperature shifted slightly higher from approximately 70˚F to 75˚F.

Explanatory Figure: 13 months energy balance plot with original data



Physical Plant Administration & Shops (TAMU Bldg# 1156)

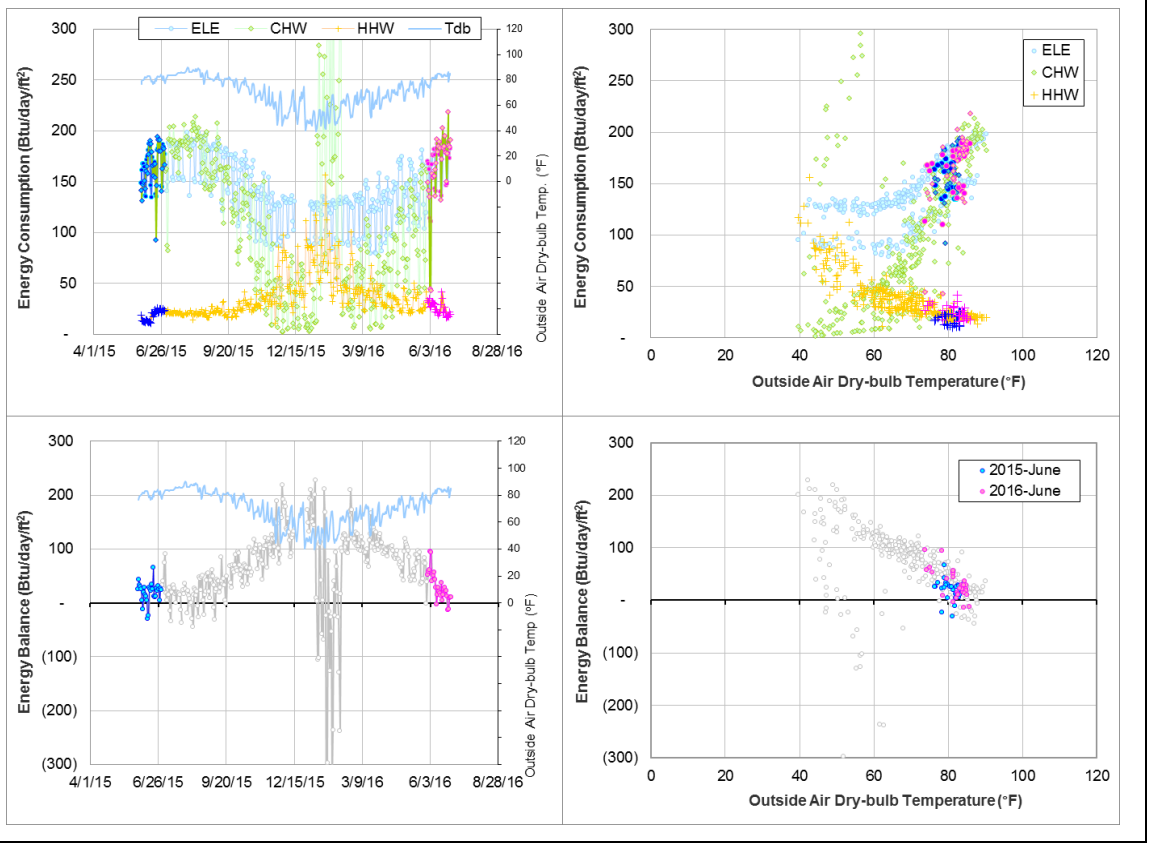
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is high, ~85˚F.	7/1/2014-ongoing
CHW	The consumption level might be low compared to the ELE and HHW use level.	Since the data became available on 7/1/2012.

Comments

The electricity is not available until 7/1/2014. CHW consumption level might be low compared to the ELE and HHW use level. But the CHW consumption level has been stable since the data became available on 7/1/2012. More information might be needed to help identify which type energy causes the high cross-point temperature.

Explanatory Figure: 13 months energy balance plot with original data



Veterinary Anatomic Pathology (TAMU Bldg #1184)

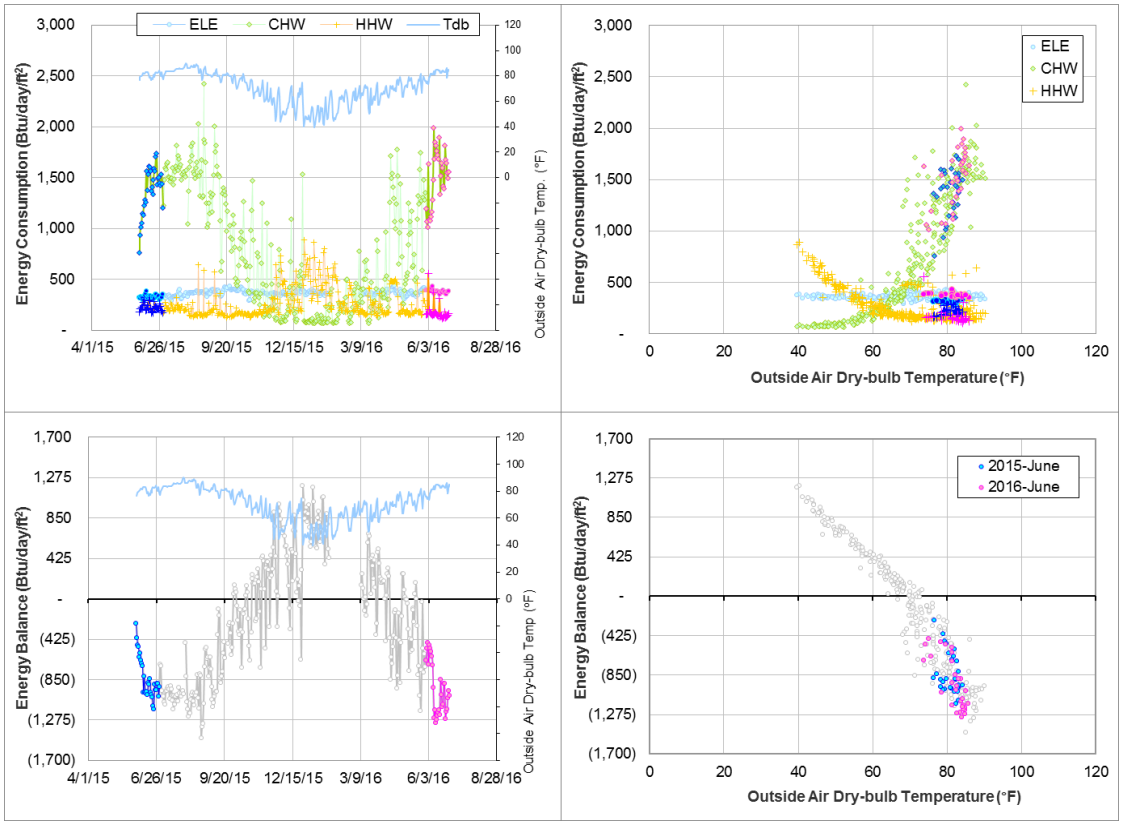
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level spikes on the weekends.	Past several months

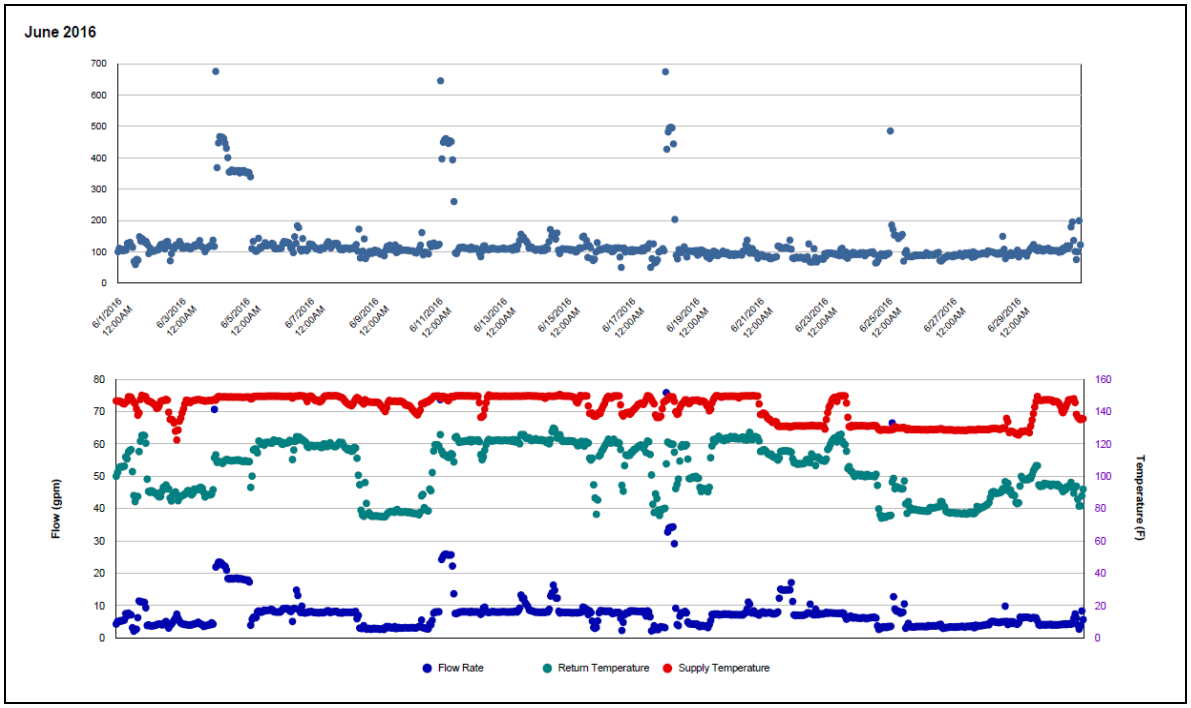
Quantitative descriptions and comments

The HHW consumption appears to spike on the weekends around four times higher than that of the weekday level.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. Note the increased consumption happens during the weekends. (June 2016)



Veterinary Research Building (TAMU Bldg# 1197)

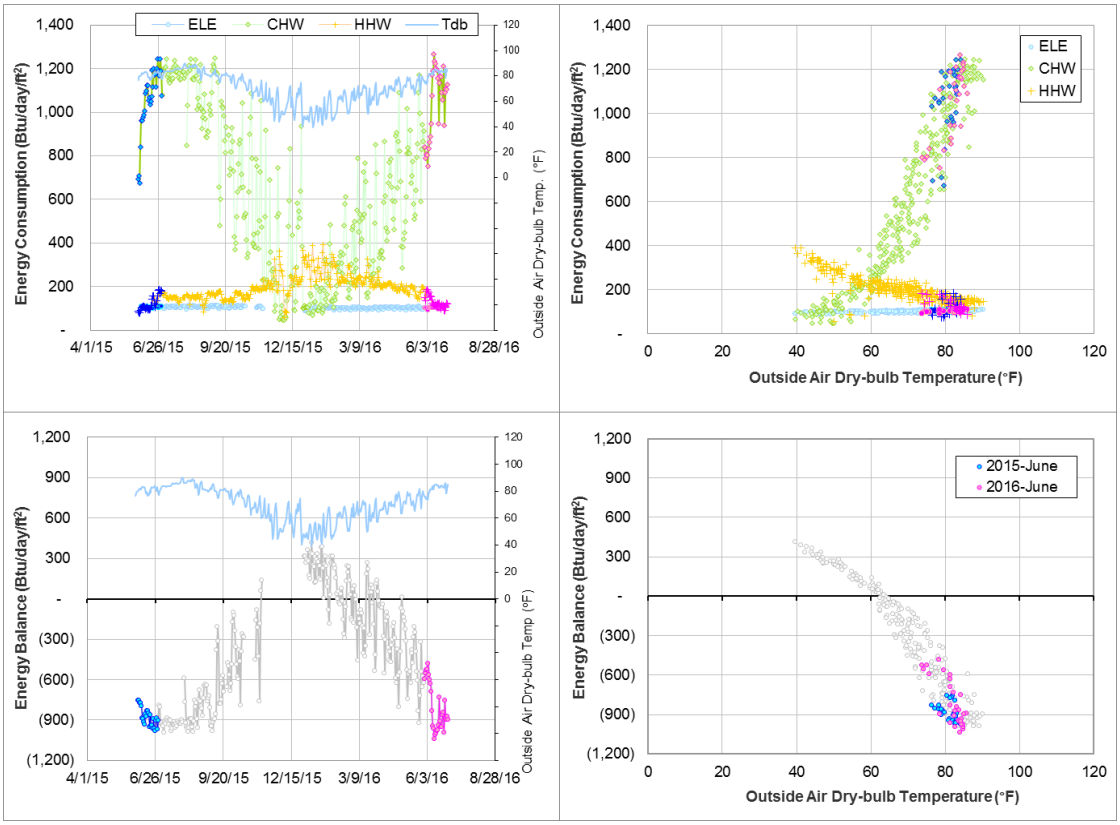
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption is low for a laboratory building.	Since January 2010 when the meter was added to this report

Comments

The whole building hourly electricity use is in the range 130 kWh to 180 kWh (1.13 W/ft^2 to 1.57 W/ft^2), which is low for a veterinary laboratory building on the campus. This seems to be the reason for the low level of the energy balance load. The temperature-axis intercept of the energy balance is around 62°F.

Explanatory Figure: 13 months energy balance plot with original data



Kleberg Center (TAMU Bldg #1501)

Detected issues in the energy balance and/or the consumption data

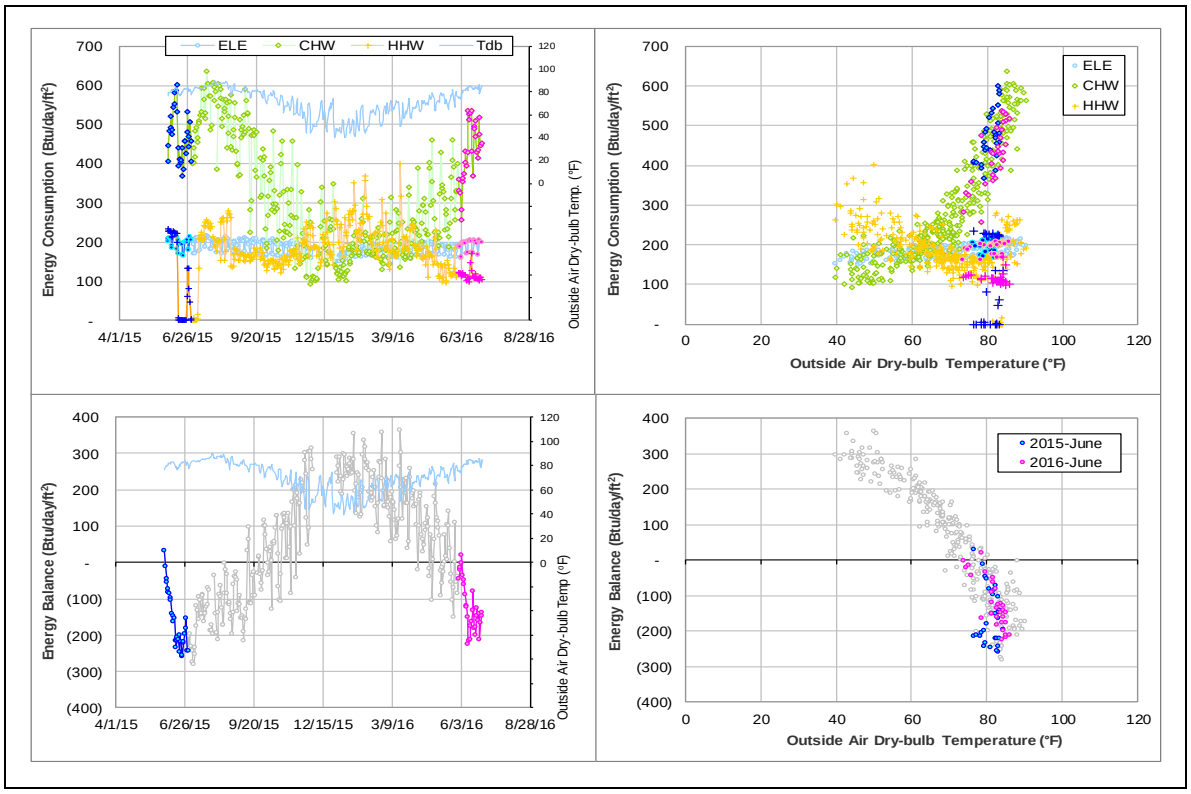
Data Type	Description of data behaviors	Period
CHW	The return temperatures is high. Delta-T is bigger than that for similar buildings in campus.	Since we started to analysis this building in 2006.

Comments

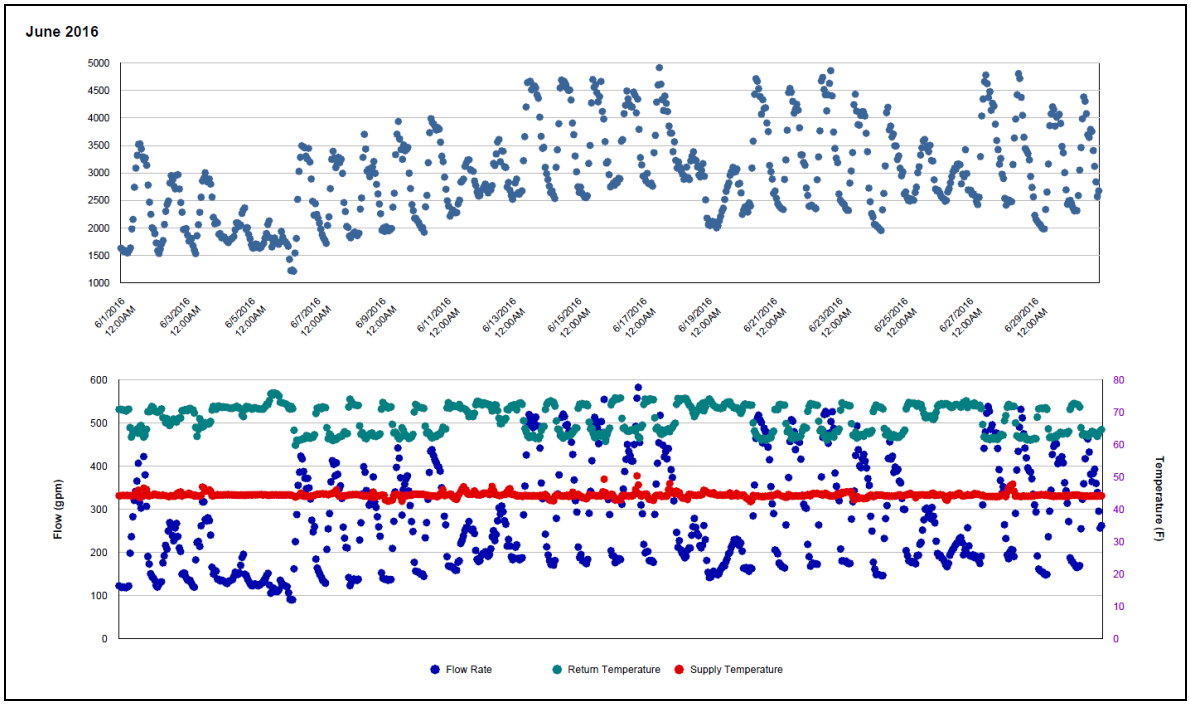
The return temperature for CHW meter was high, about 60 - 70°F for years. The return temperature increased further on 11/13/2014 and it reached 80°F sometimes. Delta-T for this building (25 - 35°F) is much bigger than that for similar buildings in campus.

The ESCO period for this building is 5/1/2011-1/1/2012. The CHW consumption level has been stable for over three years after ESCO period.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office (CHW during June 2016)



West Campus Parking Garage (TAMU Bldg #1559)

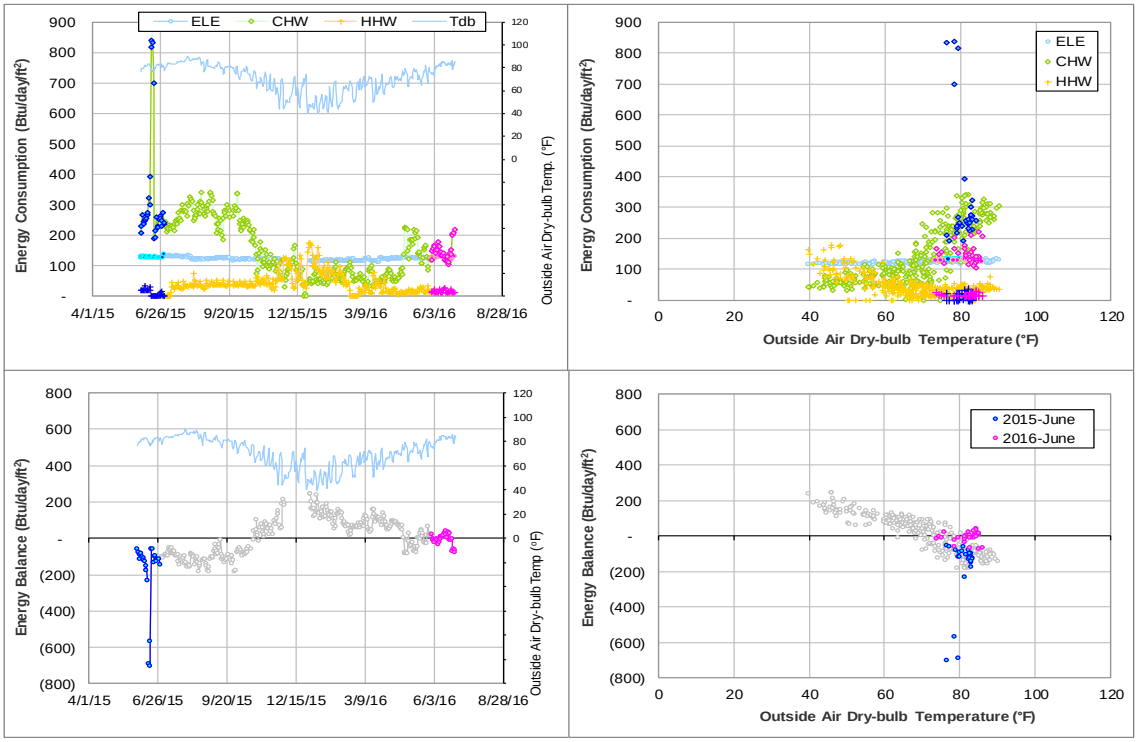
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level decreased largely. The scattering data was observed.	October 2013 - ongoing
	The consumption level increased. The scattering data was observed.	5/28/2015 - ongoing

Comments

The CHW consumption level decreased from 800 Btu/day/ft^2 to 100 Btu/day/ft^2 since October 2013 mainly caused by a decrease in the flow rate. The consumption pattern was very scattering and the cross-point temperature is high, 75-85˚F, after this decrease. The CHW consumption increased at the end of May 2015 which causing the cross-point shift to more reasonable range. We need more data to verify this trend. But the consumption pattern is still very scattering.

Explanatory Figure: 13 months energy balance plot with original data



International Ocean Discovery Building (TAMU Bldg #1601)

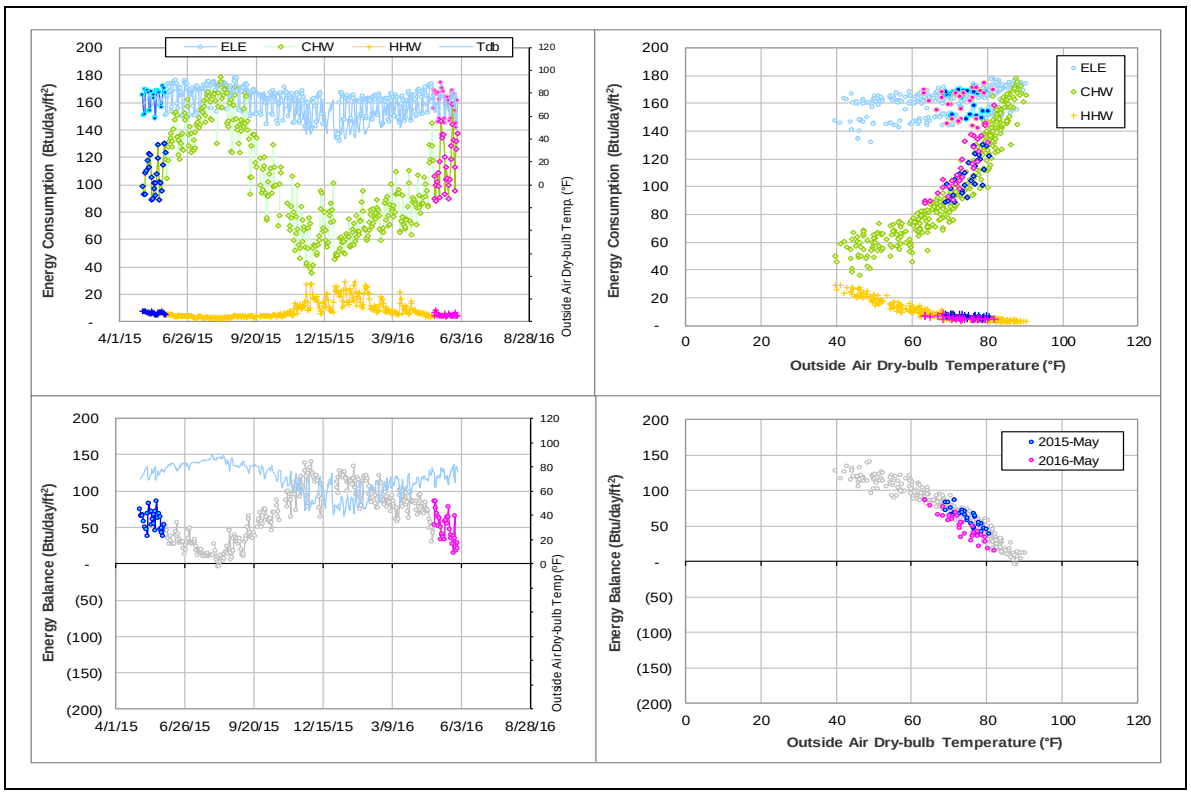
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point is high, around 88 °F.	Since data became available in Feb 2015

Comments

The cross-point temperature is high for this building, around 88°F. The daily CHW consumption for last year is 40 – 180 Btu/day/ft^2. The CHW consumption level is low compared to ELE and HHW levels. This building might have its chillers.

Explanatory Figure: 13 months energy balance plot with original data



Offshore Technology Research Center (TAMU Bldg #1604)

Detected issues in the energy balance and/or the consumption data

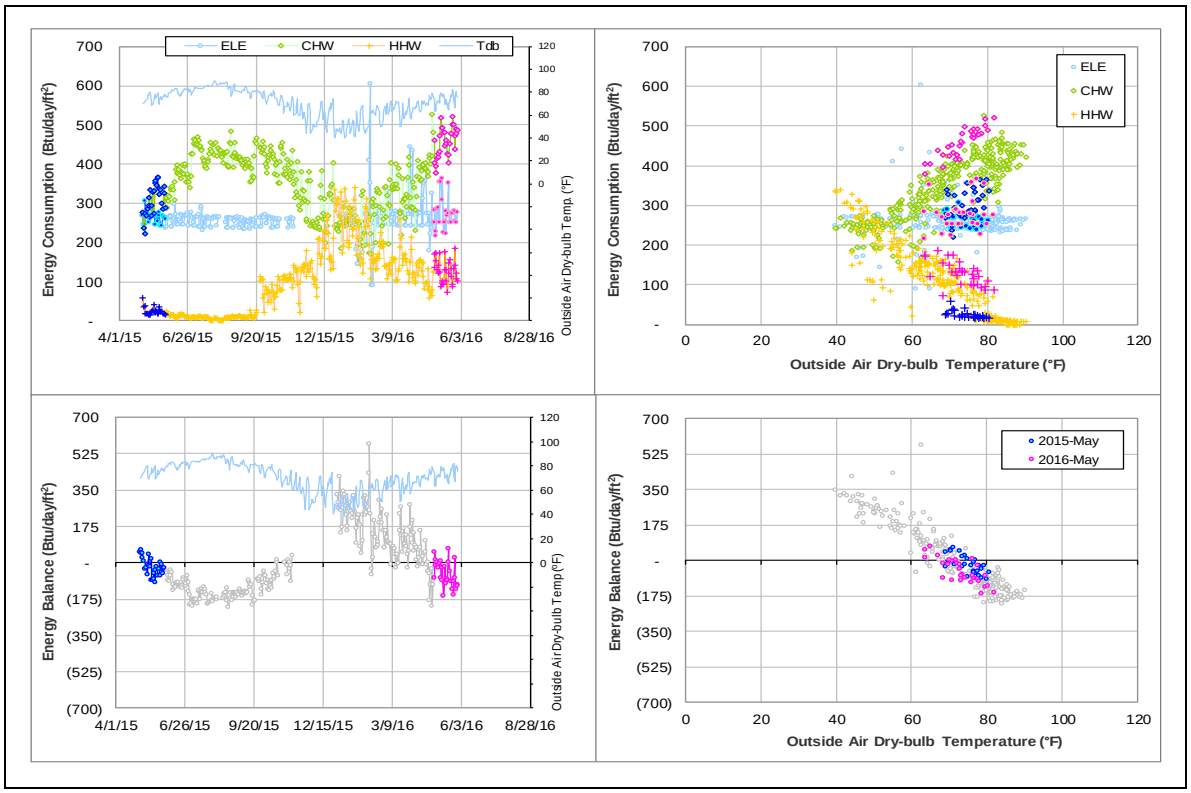
Data Type	Description of data behaviors	Period
ELE (006660)	The daily consumption was recorded as zero for the majority of the days.	Since data became available in Feb 2015
CHW and HHW	The consumption level is higher than that of last year.	5/1/2016-ongoing

Comments

Both CHW and HHW consumption level is higher than that of last year in this month.

There are two ELE meters (006659 and 006660). The daily consumption for MeterID 006660 was recorded as zero for the majority of the days since data became available in February 2015. The daily consumption for several days in recent several months increased largely and caused scattering energy balance.

Explanatory Figure: 13 months energy balance plot with original data



Engineering Research Building (TAMU Bldg #1611)

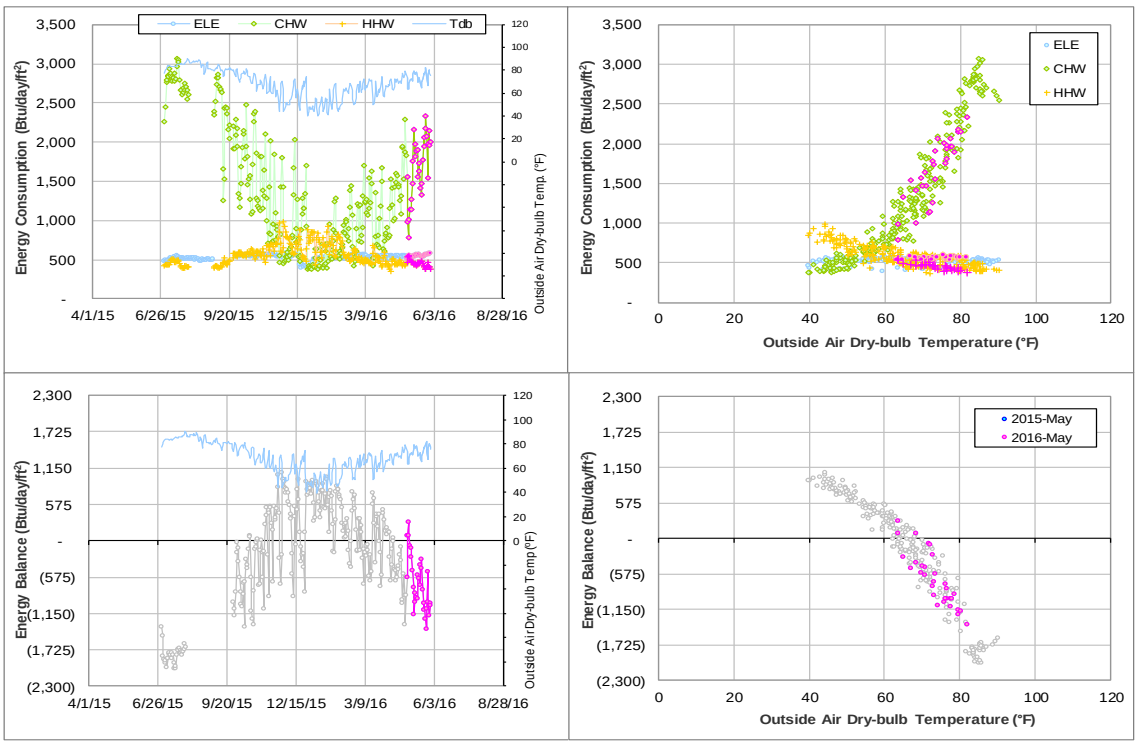
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE, CHW and HHW	The consumption levels are too high.	Since the data became available in July 2015

Comments

The energy data for this building just becomes available since July 2015. All consumption levels seem to be high. ELE: ~500 Btu/day/ft^2; CHW: 500 – 3100 Btu/day/ft^2; HHW: 400 - 1000 Btu/day/ft^2. However, the cross-point of temperature for energy balance load is in the reasonable range.

Explanatory Figure: 13 months energy balance plot with original data



III. Time Series Plots for June 2016 Consumption

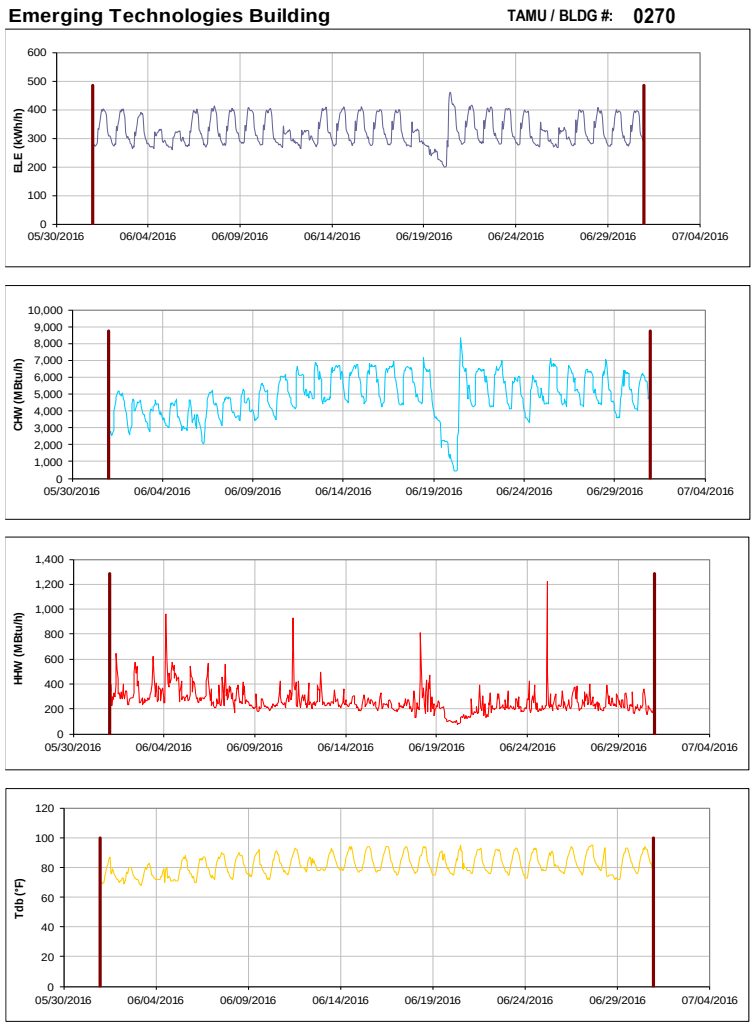


Figure III-1 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Emerging Technologies Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

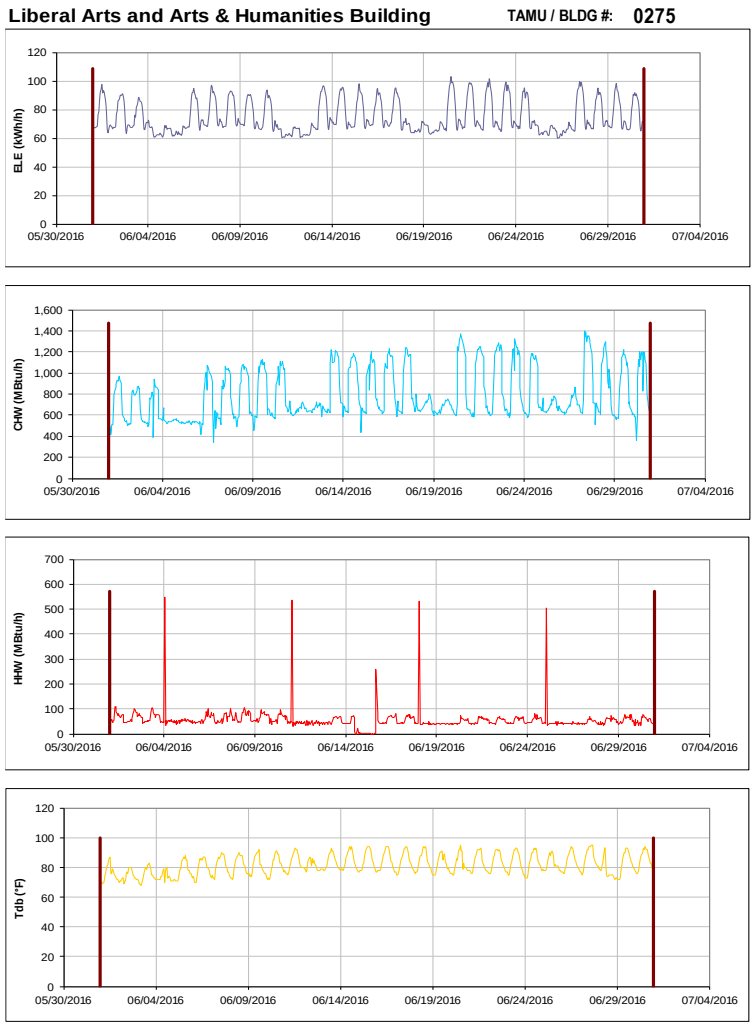


Figure III-2 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Liberal Arts and Arts & Humanities Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

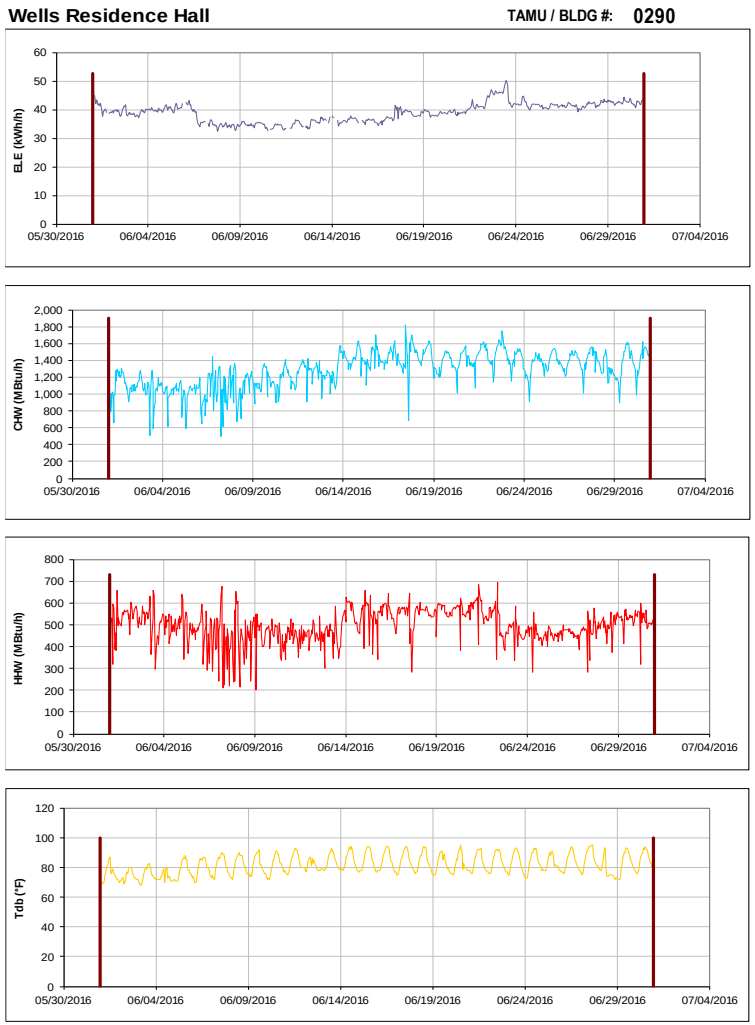


Figure III-3 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wells Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

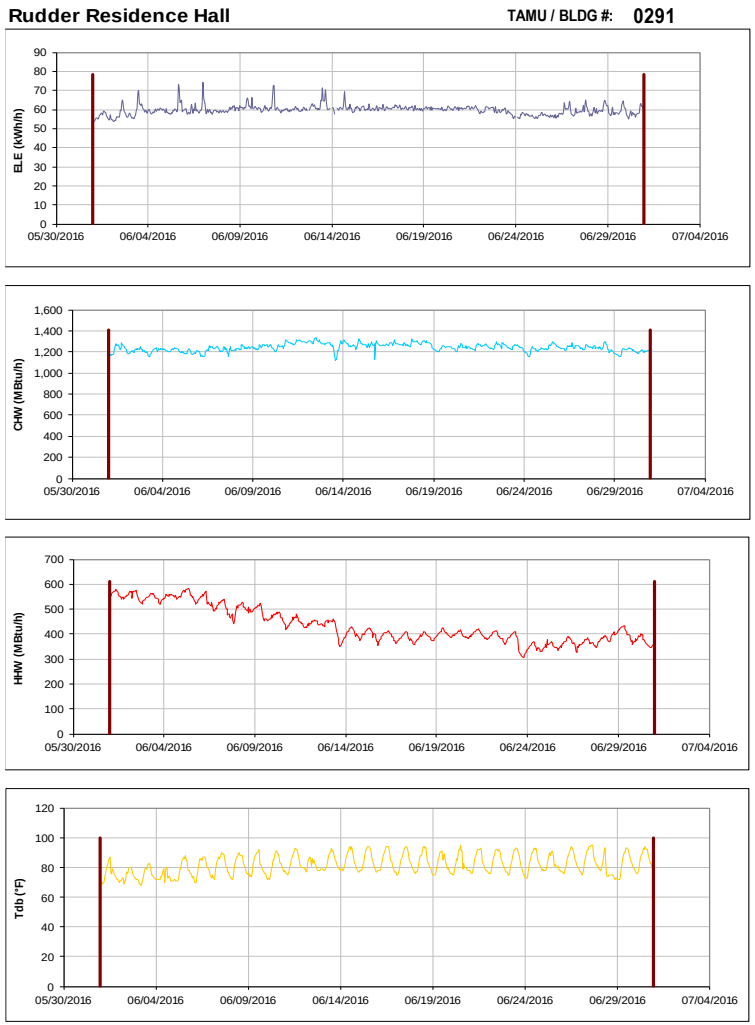


Figure III-4 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

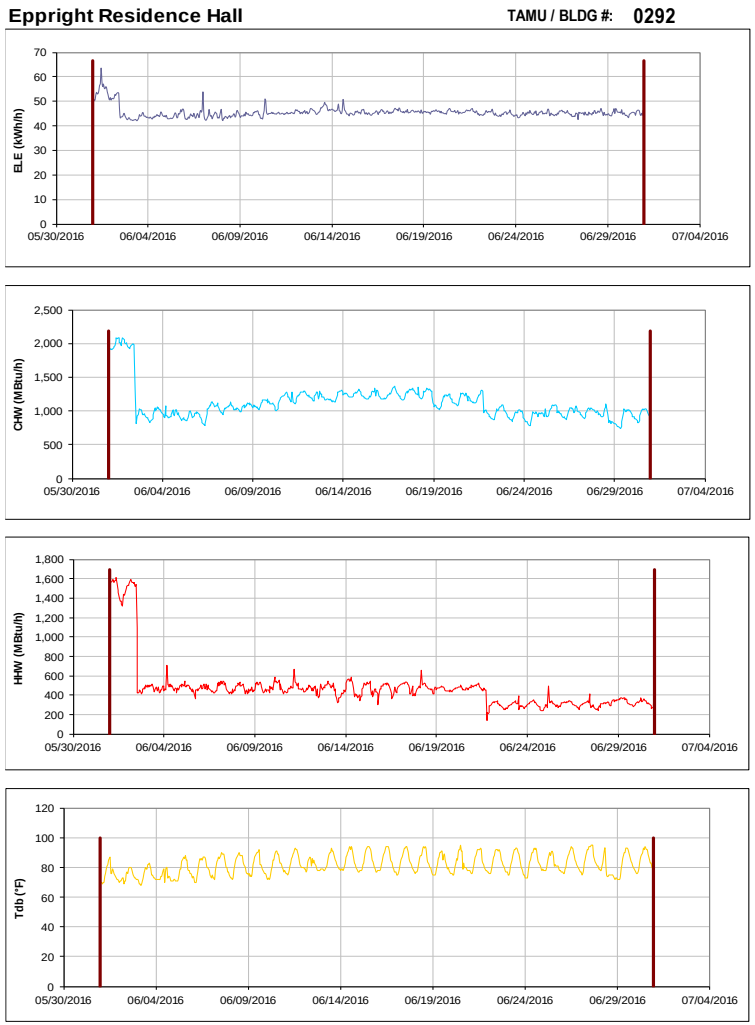


Figure III-5 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Eppright Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

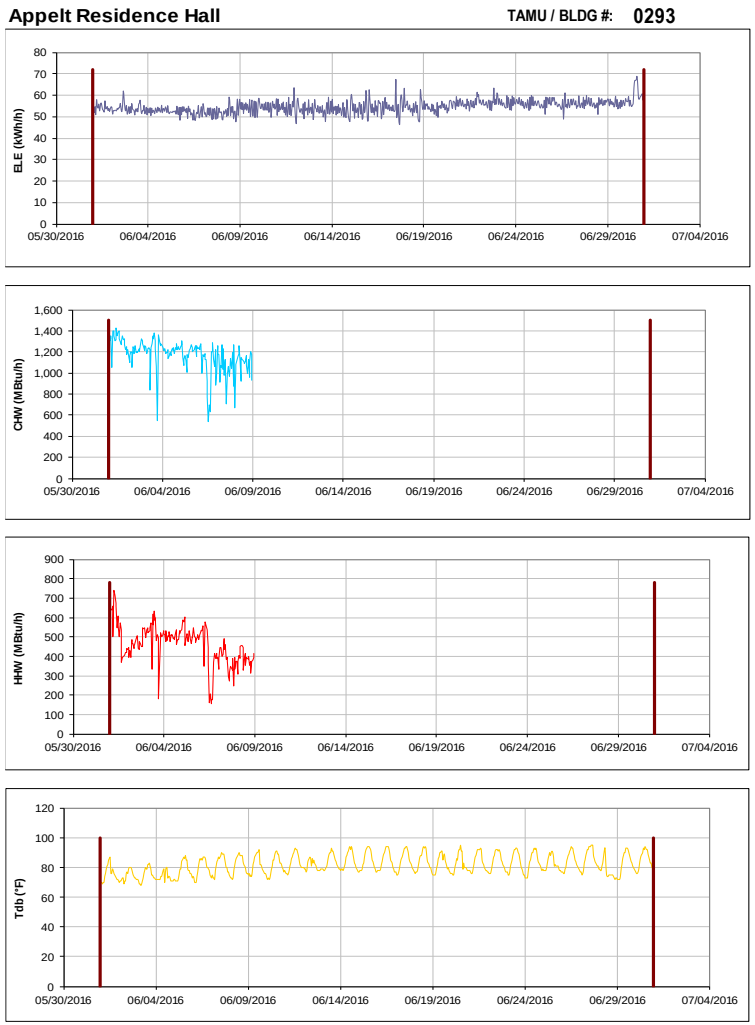


Figure III-6 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Appelt Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

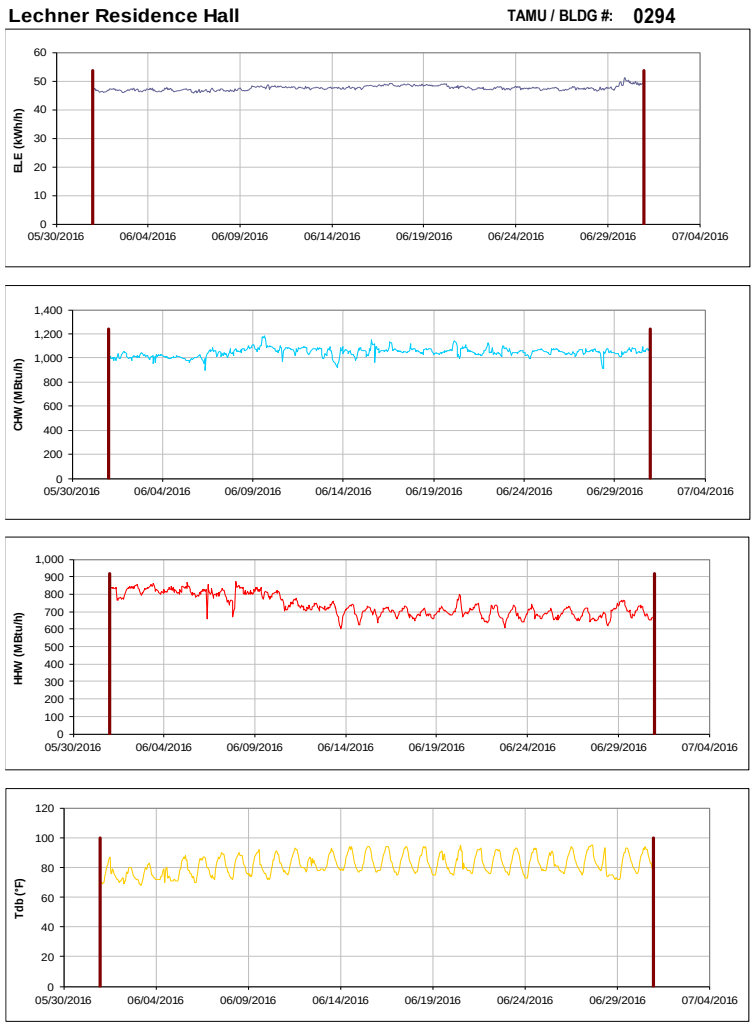


Figure III-7 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lechner Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

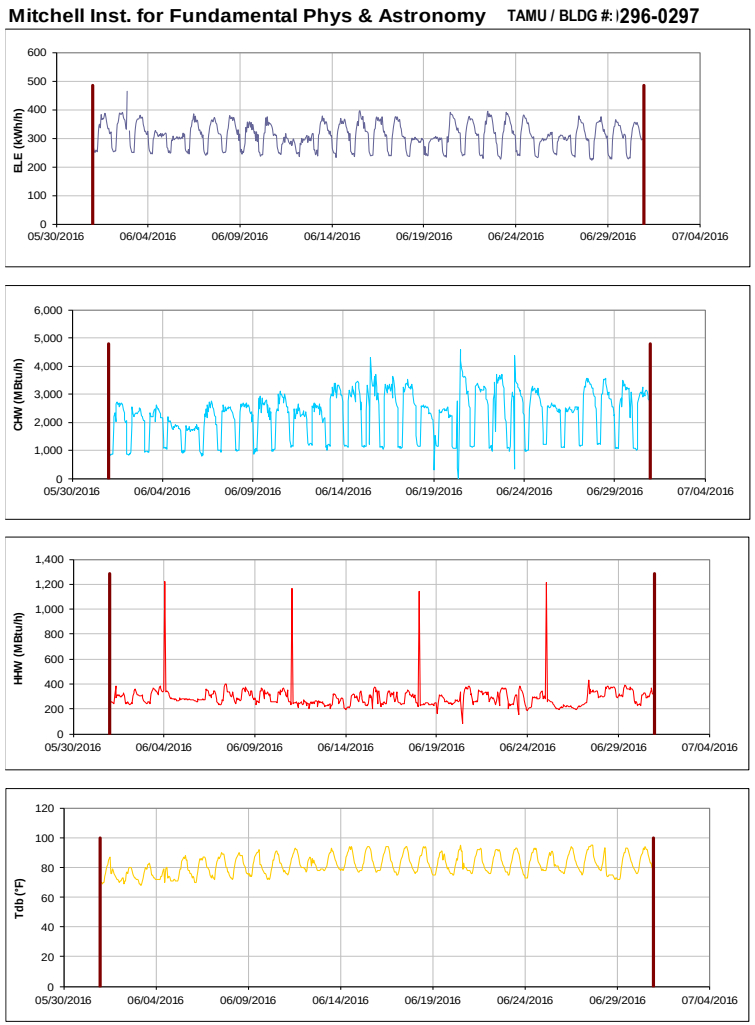


Figure III-8 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mitchell Inst. for Fundamental Phys & Astronomy during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

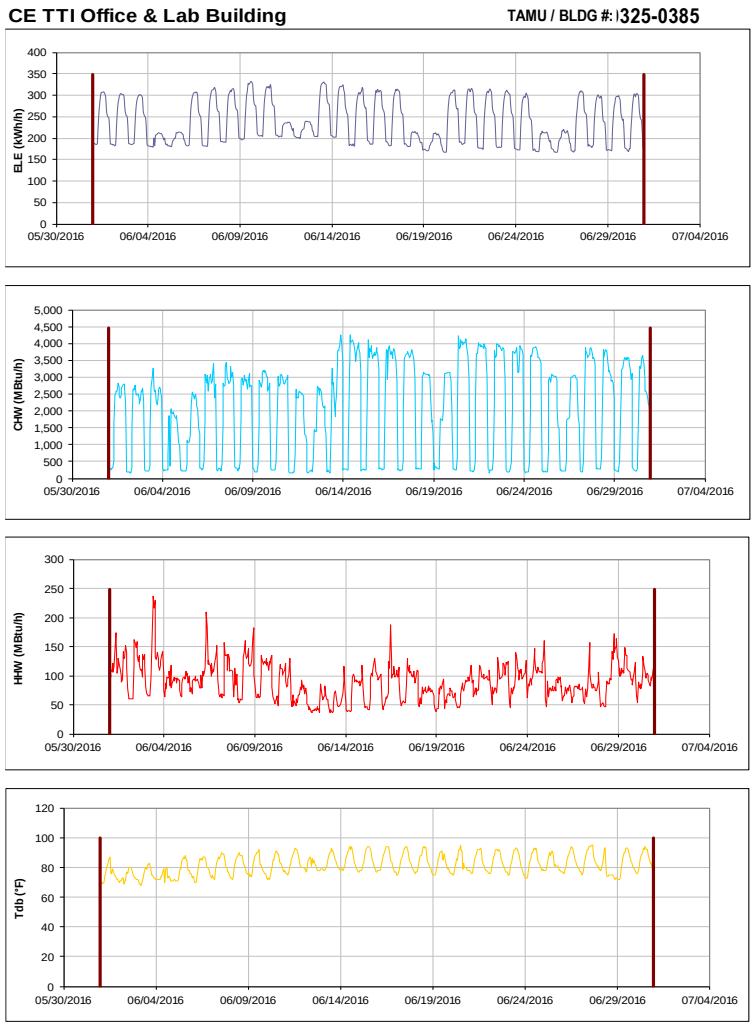


Figure III-9 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for CE TTI Office & Lab Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

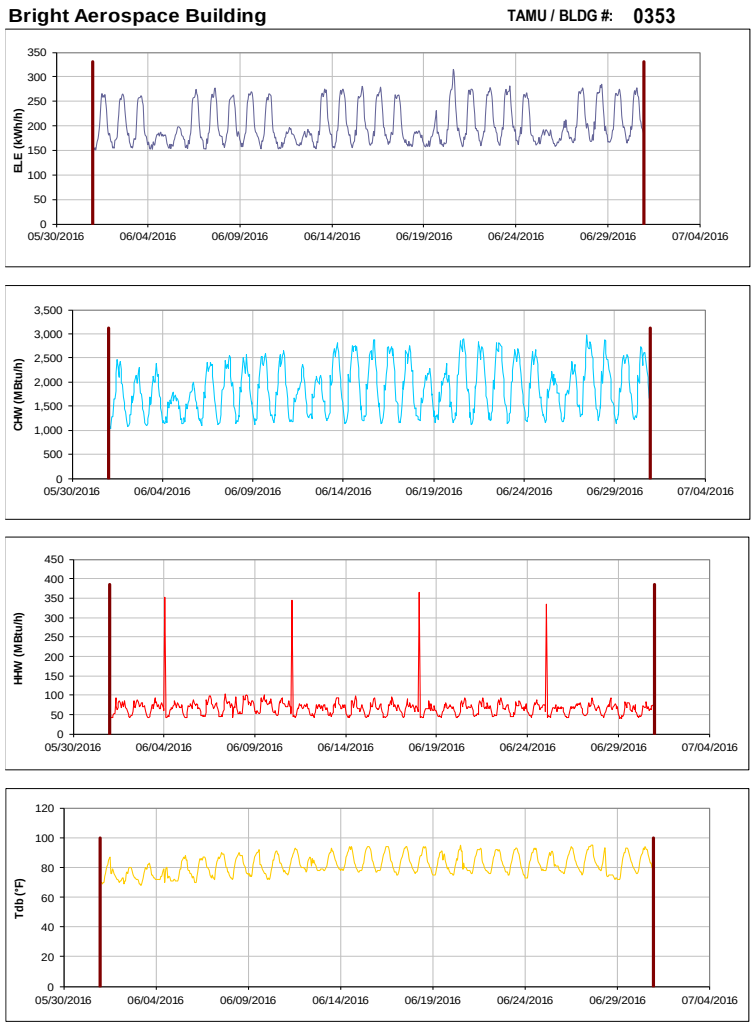


Figure III-10 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Aerospace Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

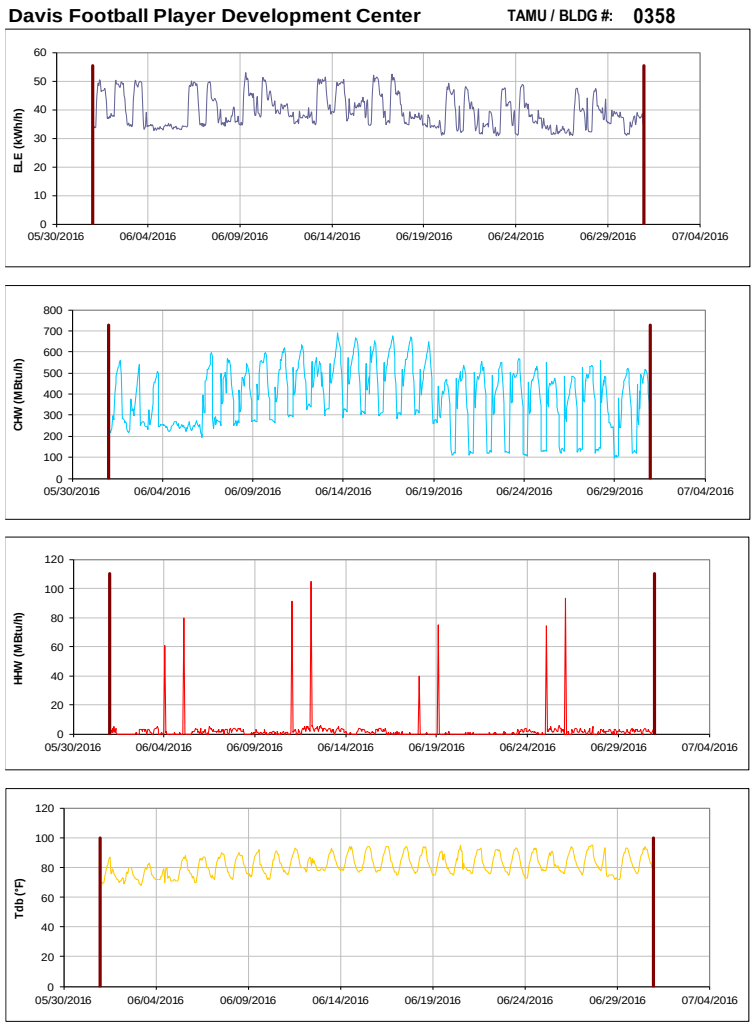


Figure III-11 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis Football Player Development Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

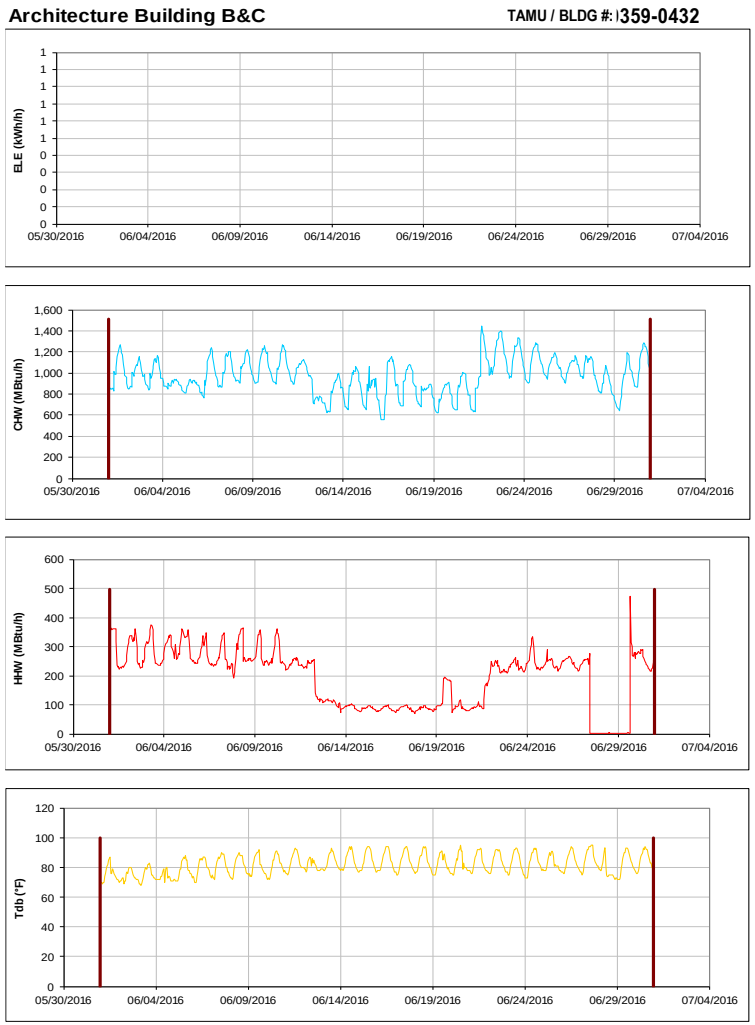


Figure III-12 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B&C during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

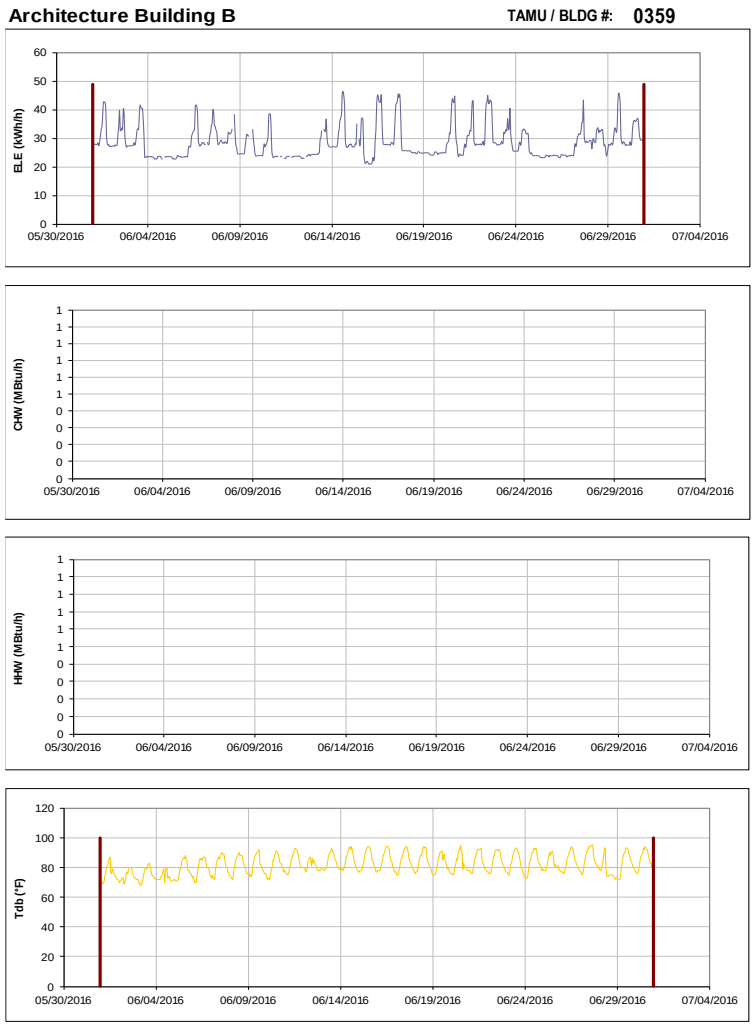


Figure III-13 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

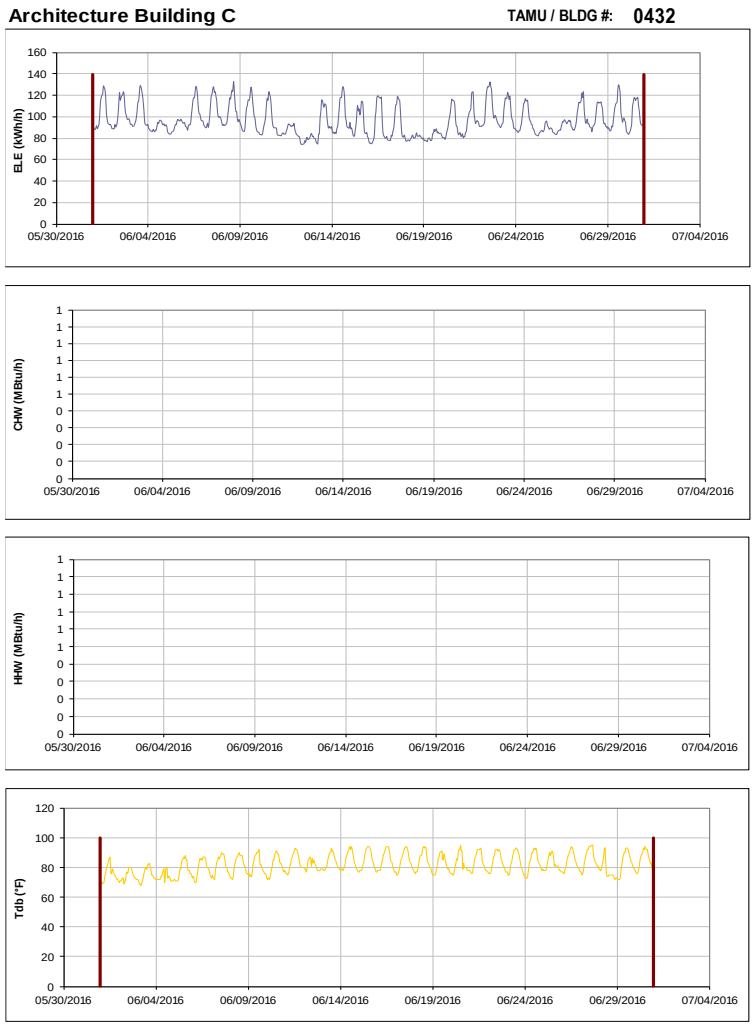


Figure III-14 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building C during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

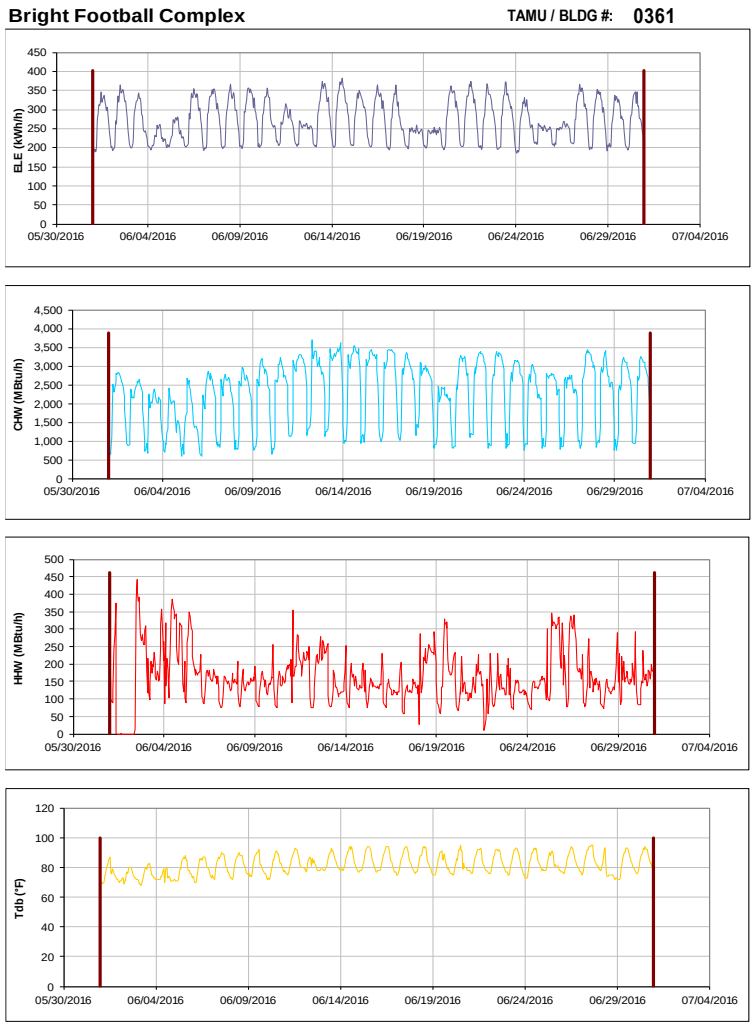


Figure III-15 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Football Complex during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

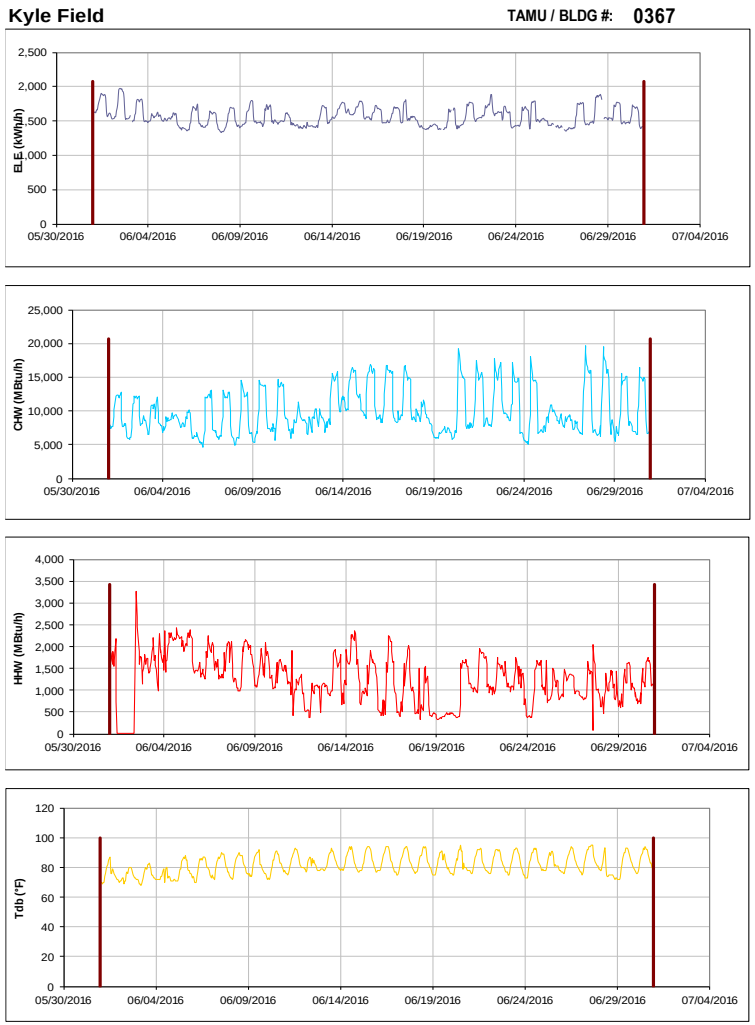


Figure III-16 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kyle Field during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

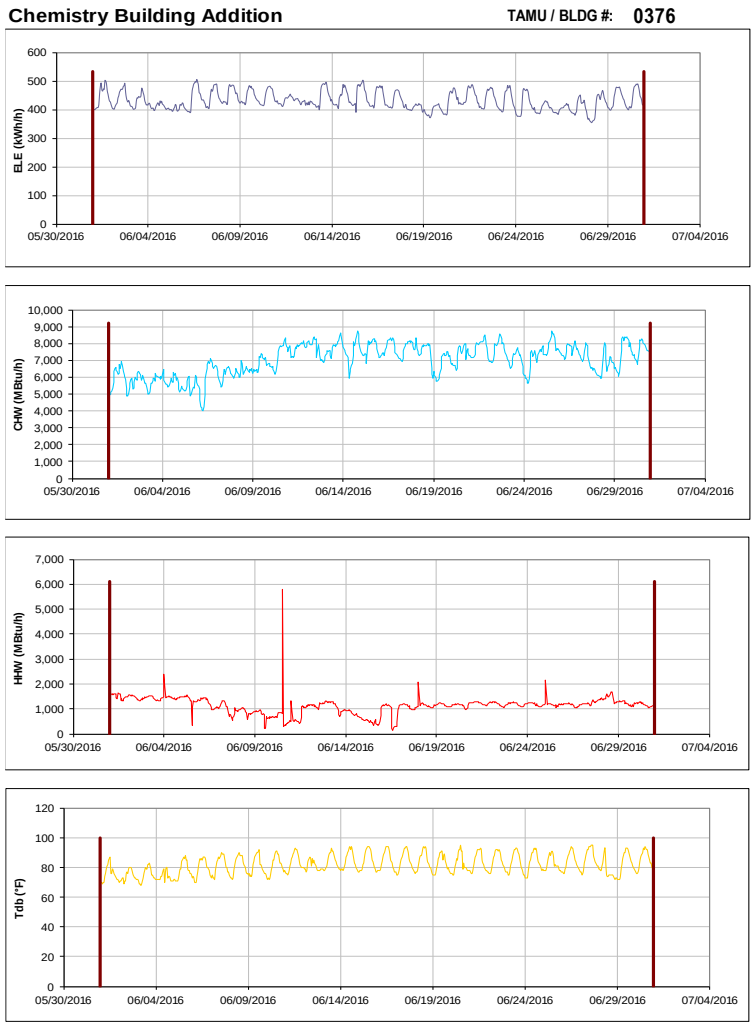


Figure III-17 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building Addition during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

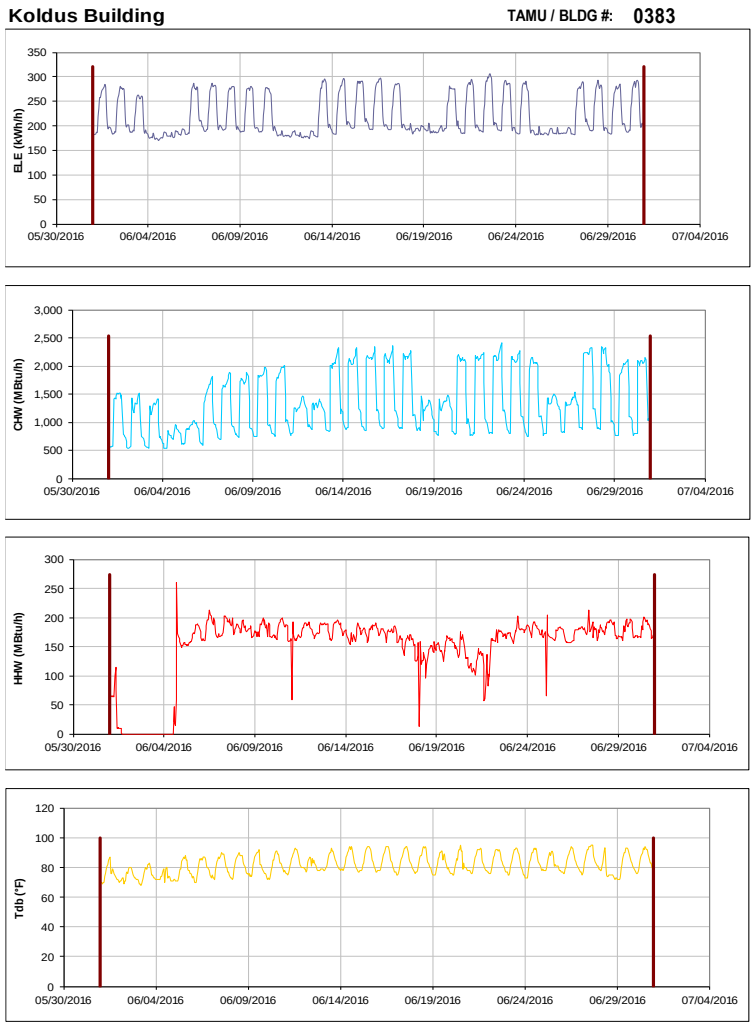


Figure III-18 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Koldus Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

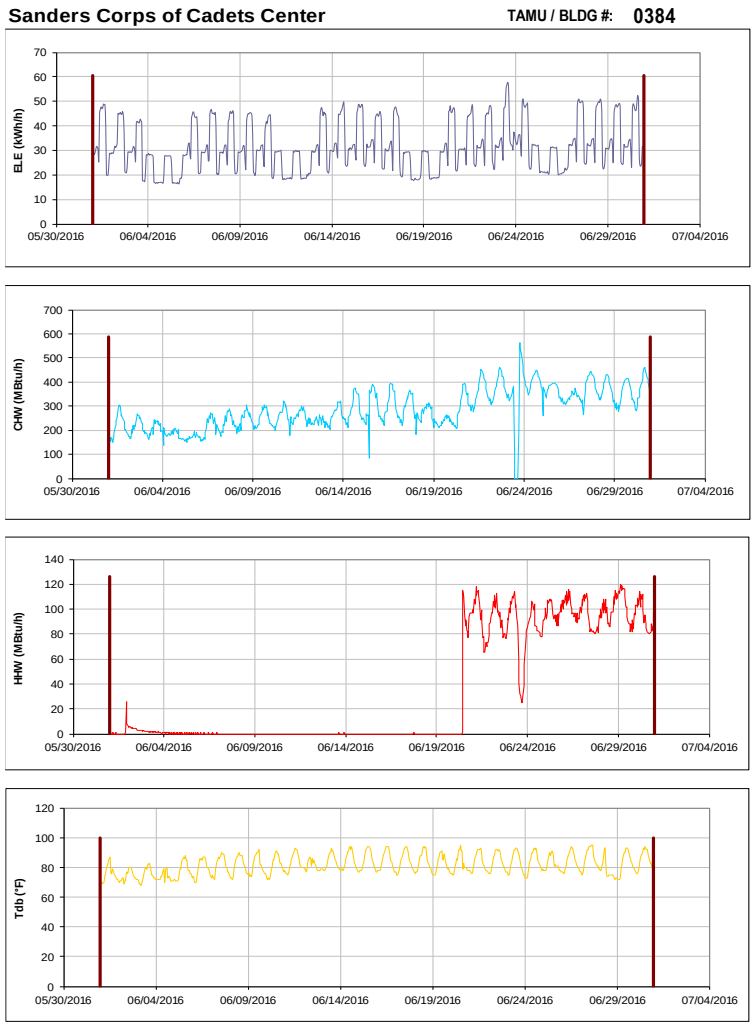


Figure III-19 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sanders Corps of Cadets Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

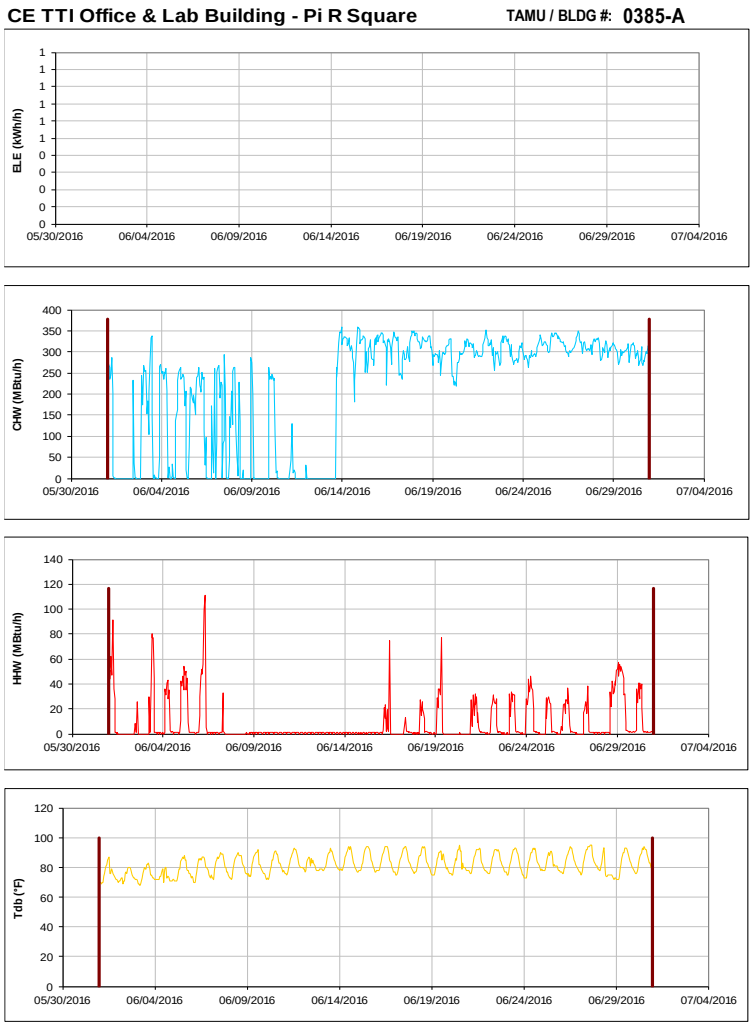


Figure III-20 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for CE TTI Office & Lab Building - Pi R Square during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

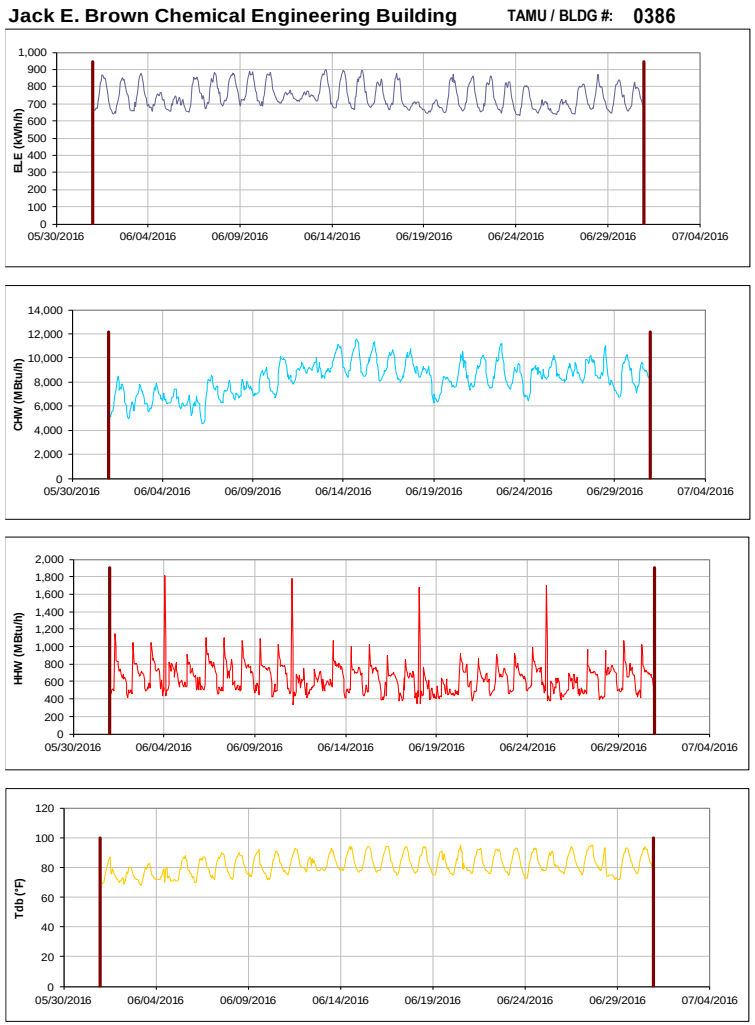


Figure III-21 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Jack E. Brown Chemical Engineering Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

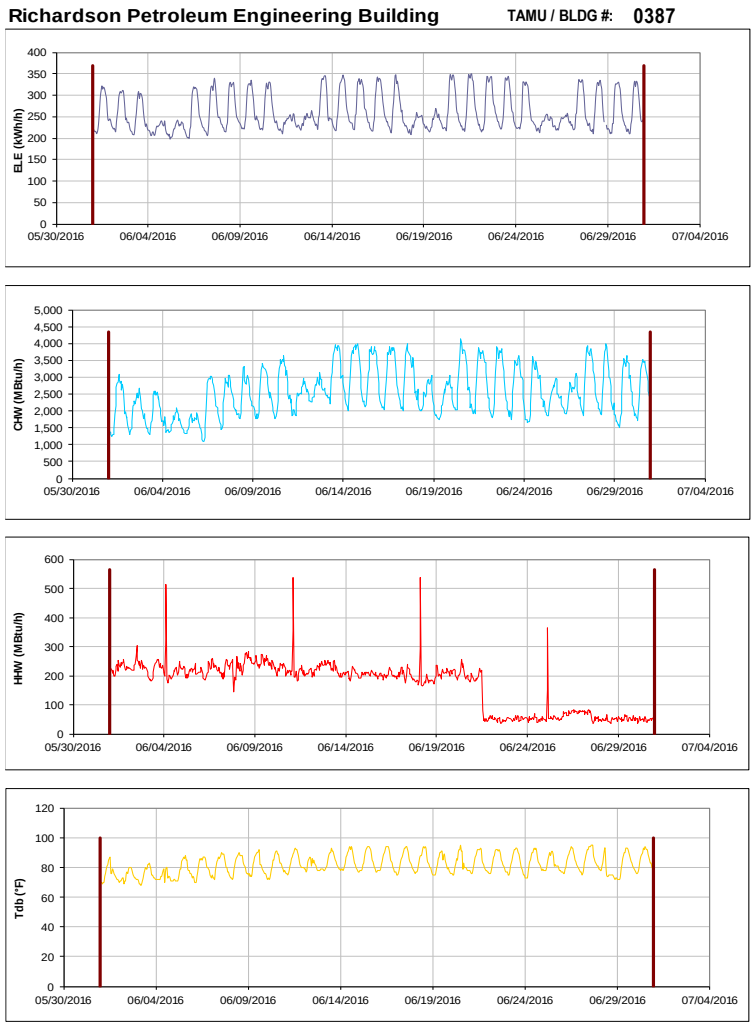


Figure III-22 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Richardson Petroleum Engineering Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

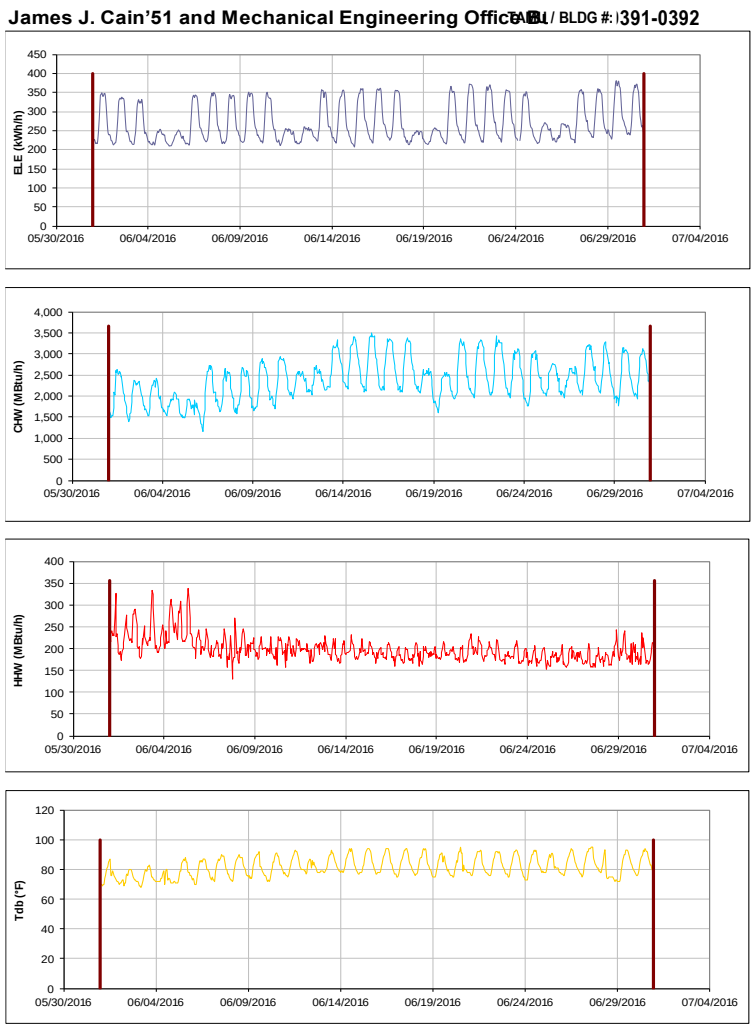


Figure III-23 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for James J. Cain'51 and Mechanical Engineering Office Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

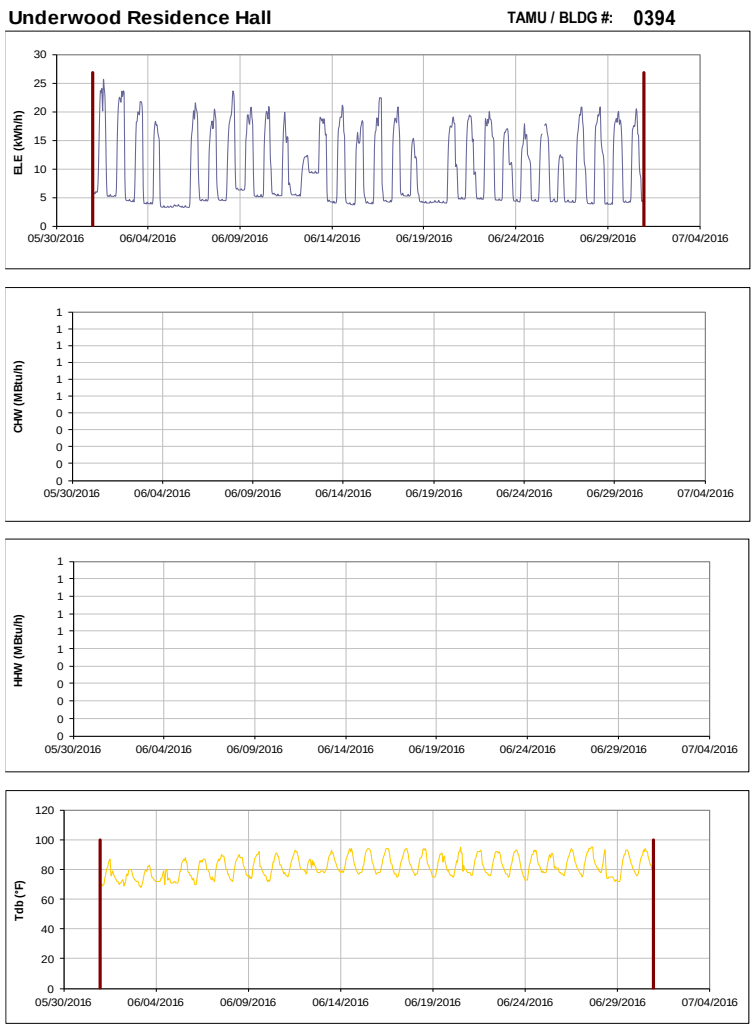


Figure III-24 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Underwood Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

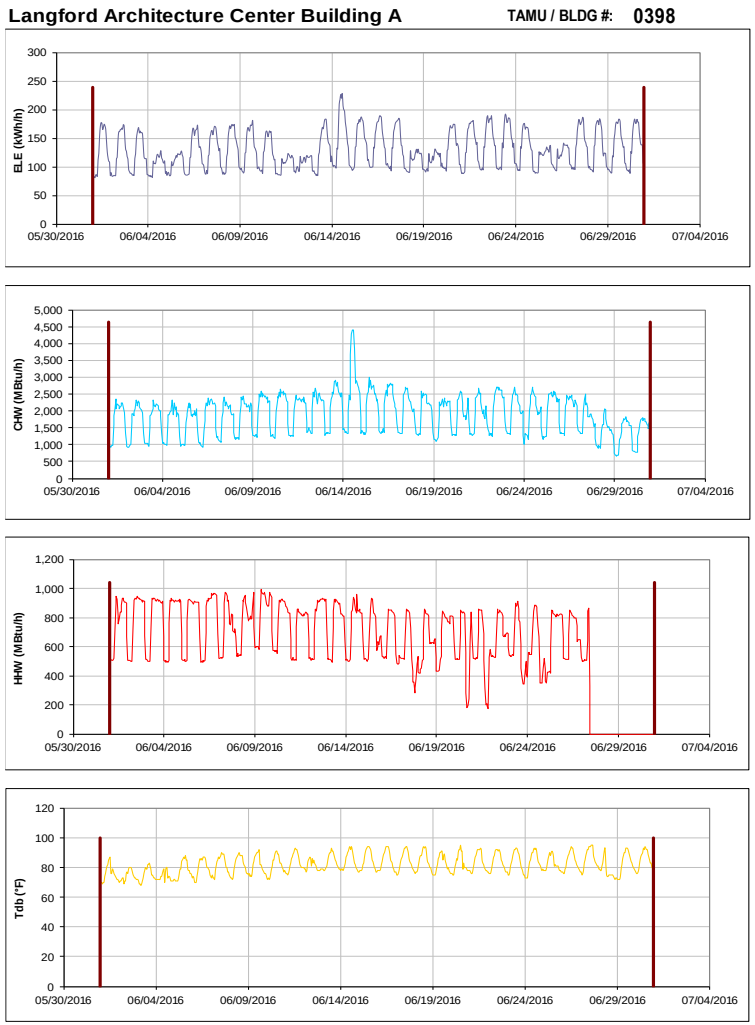


Figure III-25 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Langford Architecture Center Building A during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

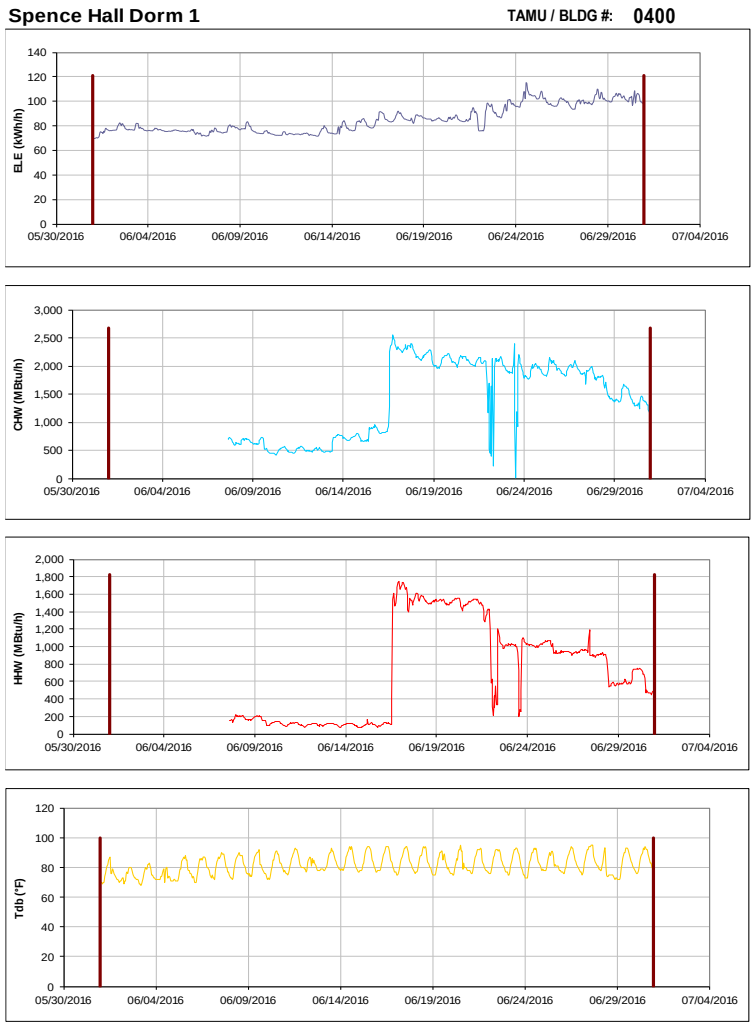


Figure III-26 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall Dorm 1 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

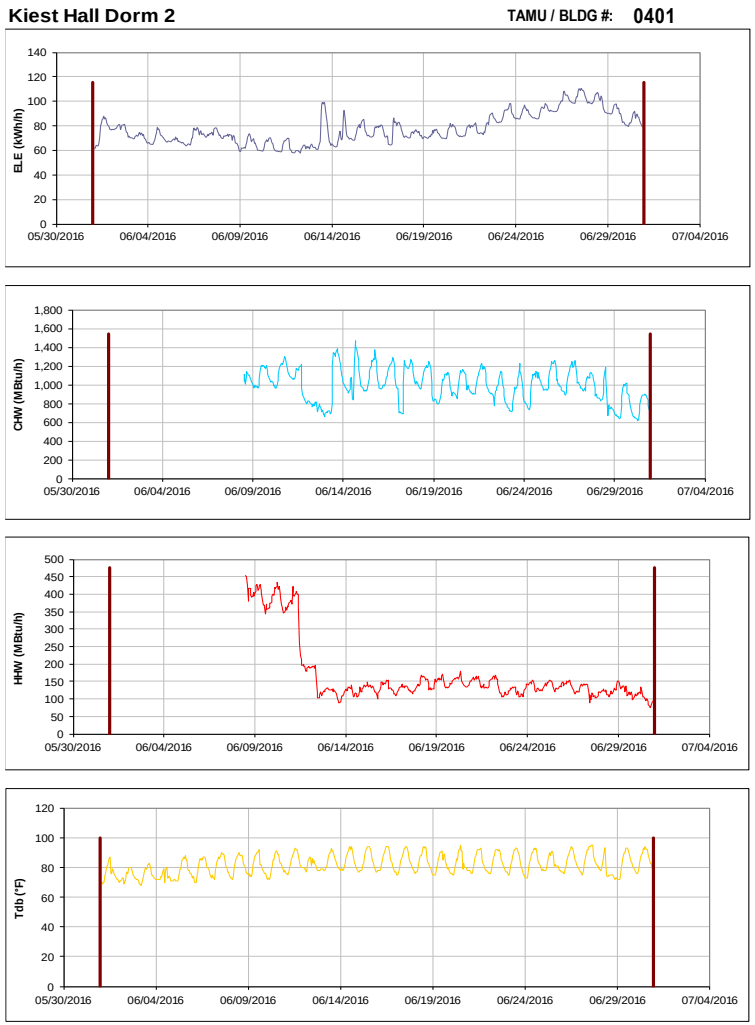


Figure III-27 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall Dorm 2 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

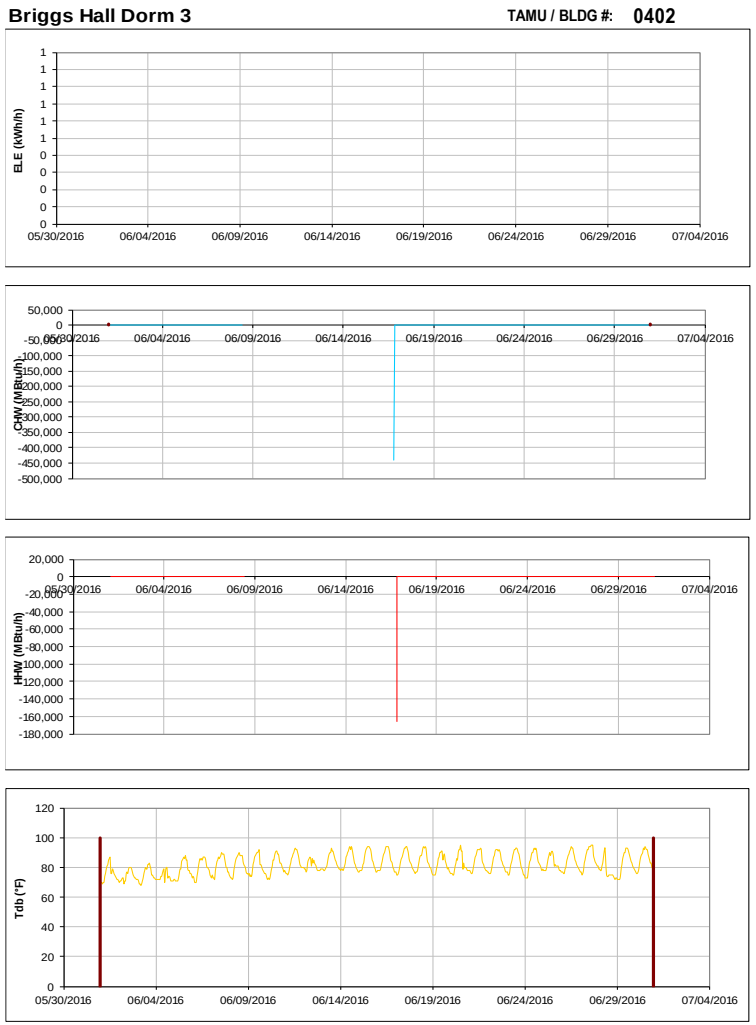


Figure III-28 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Briggs Hall Dorm 3 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

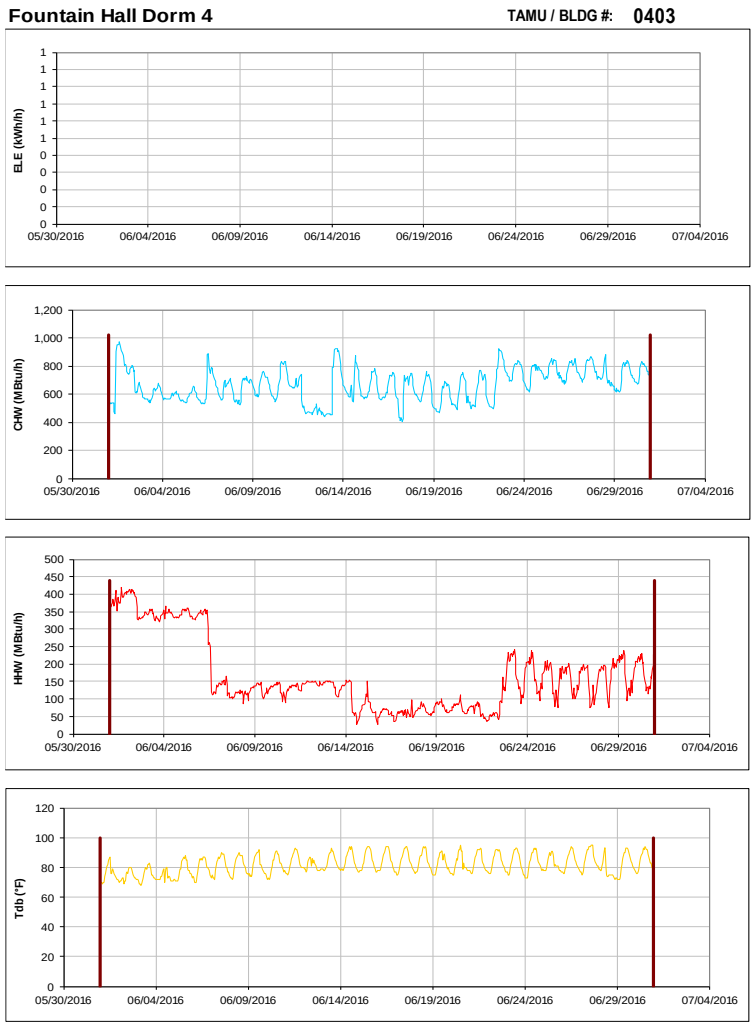


Figure III-29 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fountain Hall Dorm 4 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

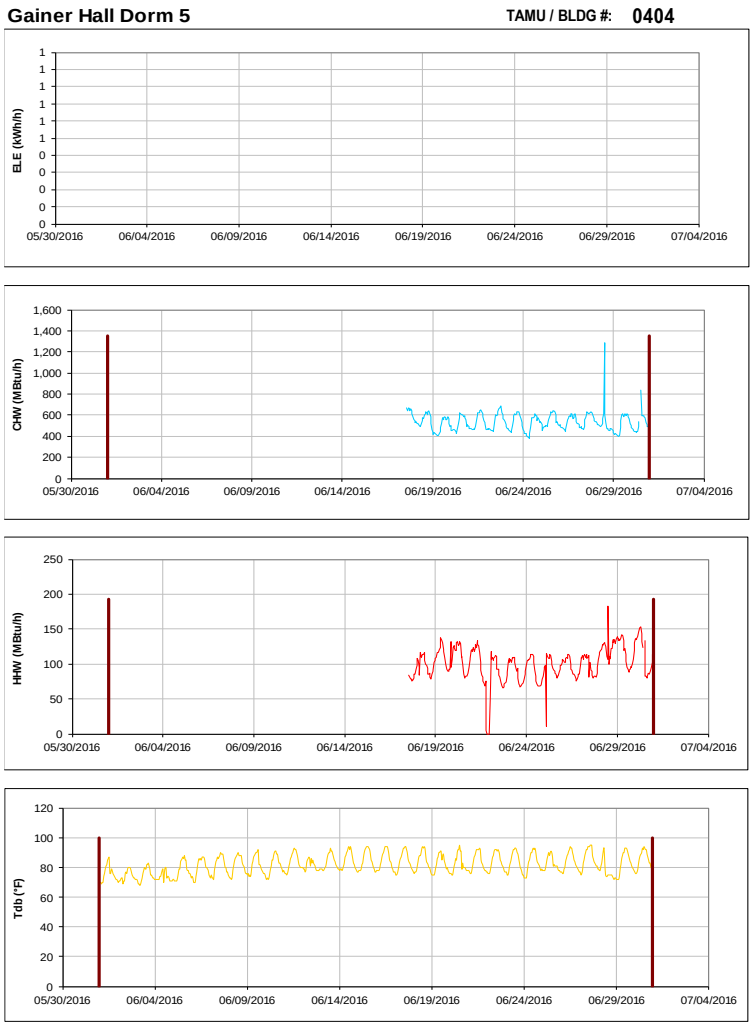


Figure III-30 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall Dorm 5 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

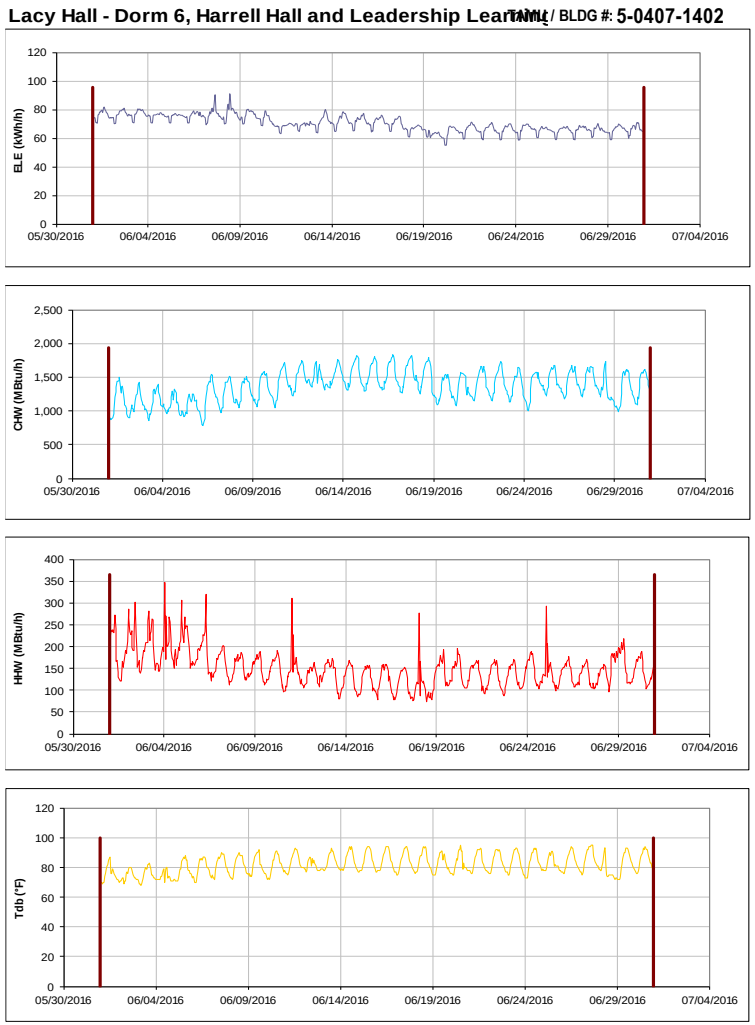


Figure III-31 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

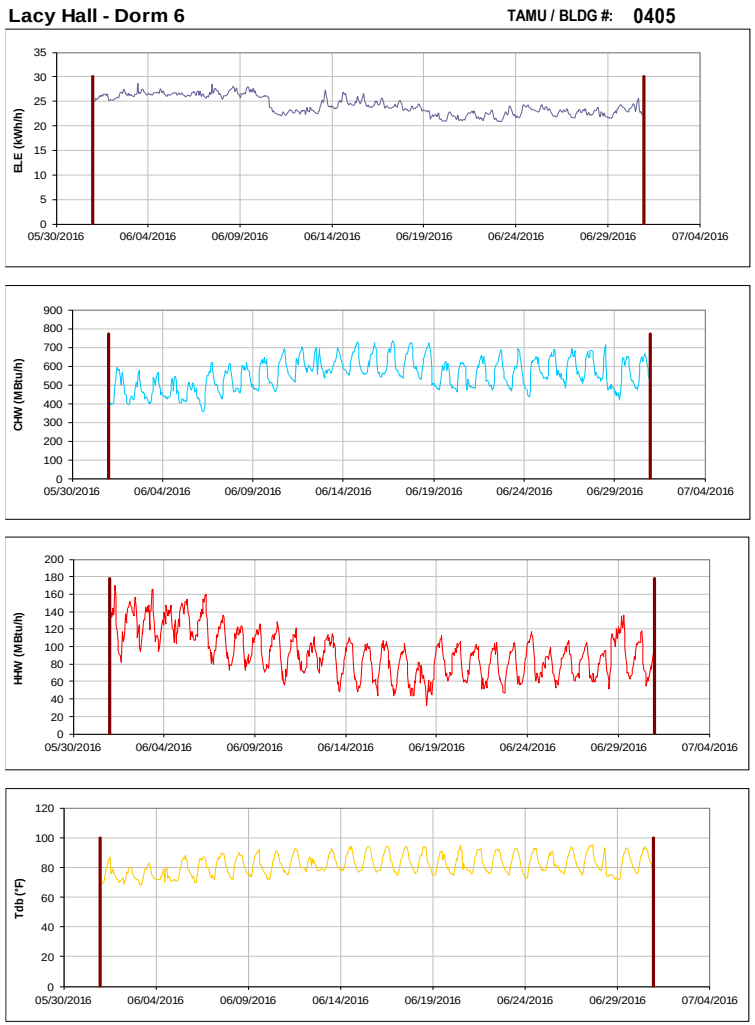


Figure III-32 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

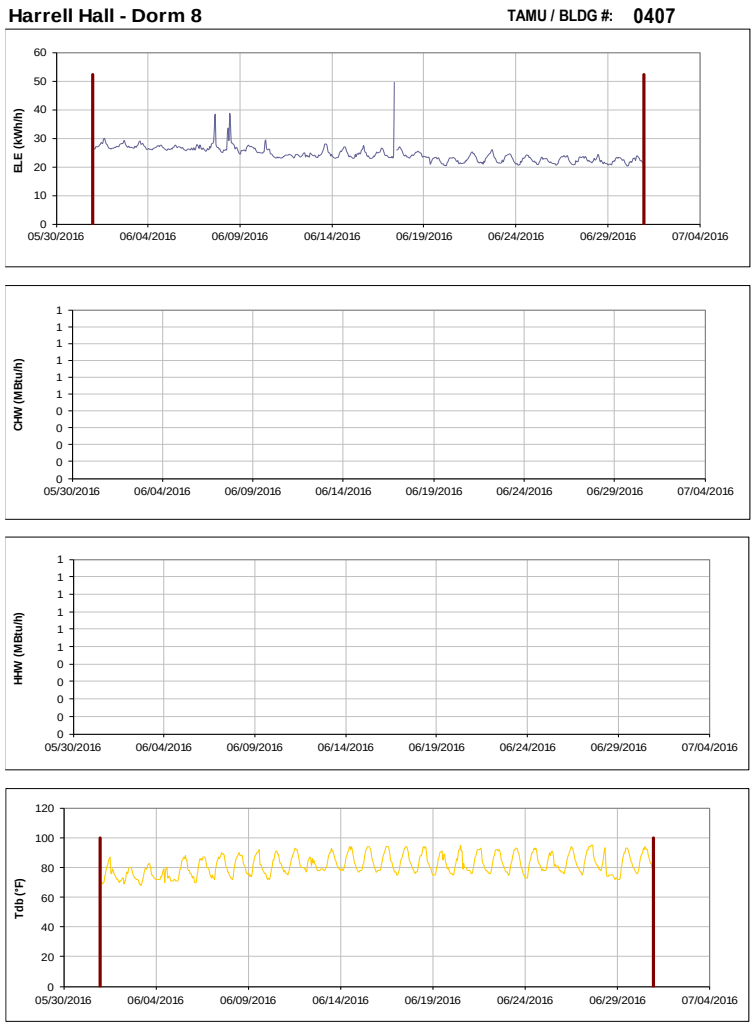


Figure III-33 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrell Hall - Dorm 8 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

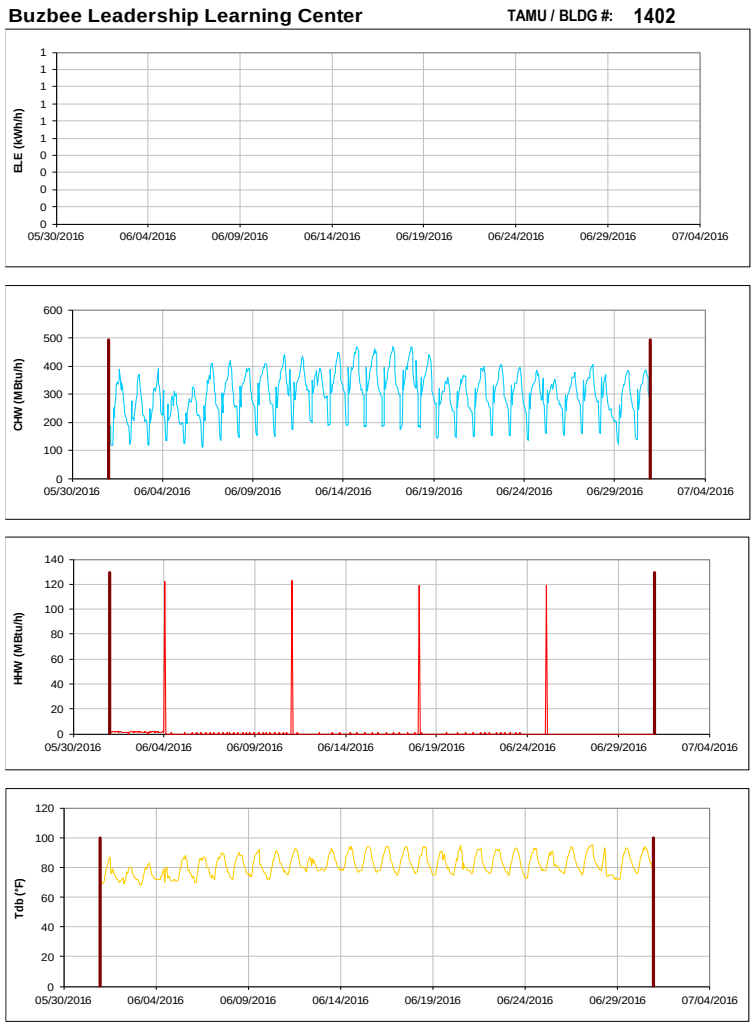


Figure III-34 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Buzbee Leadership Learning Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

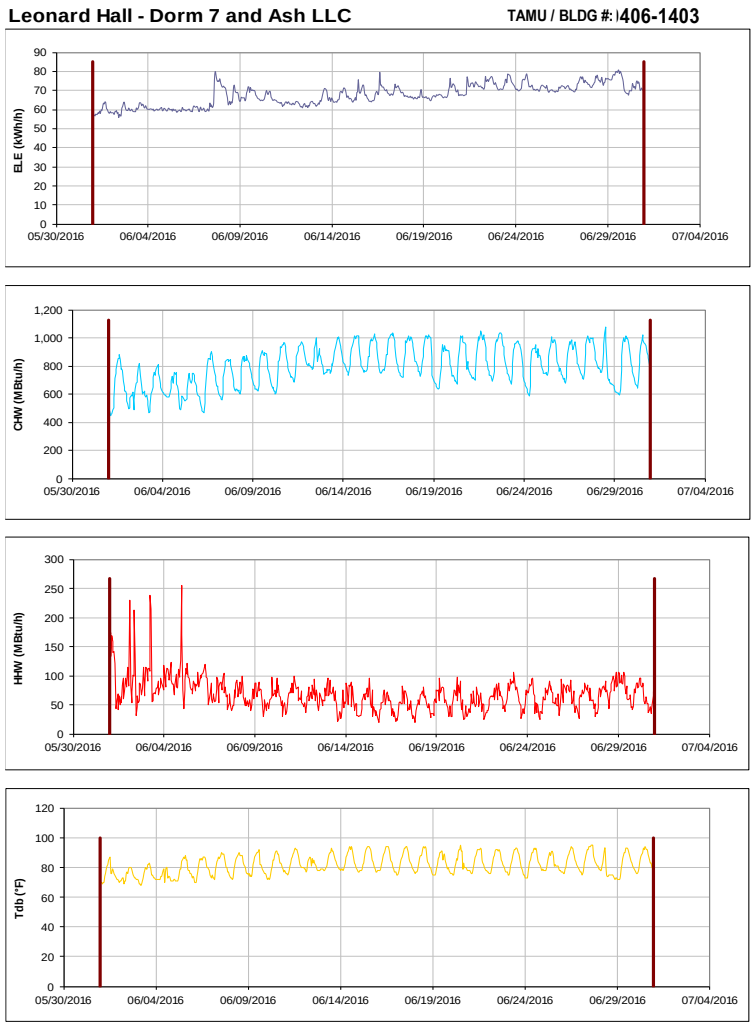


Figure III-35 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 and Ash LLC during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

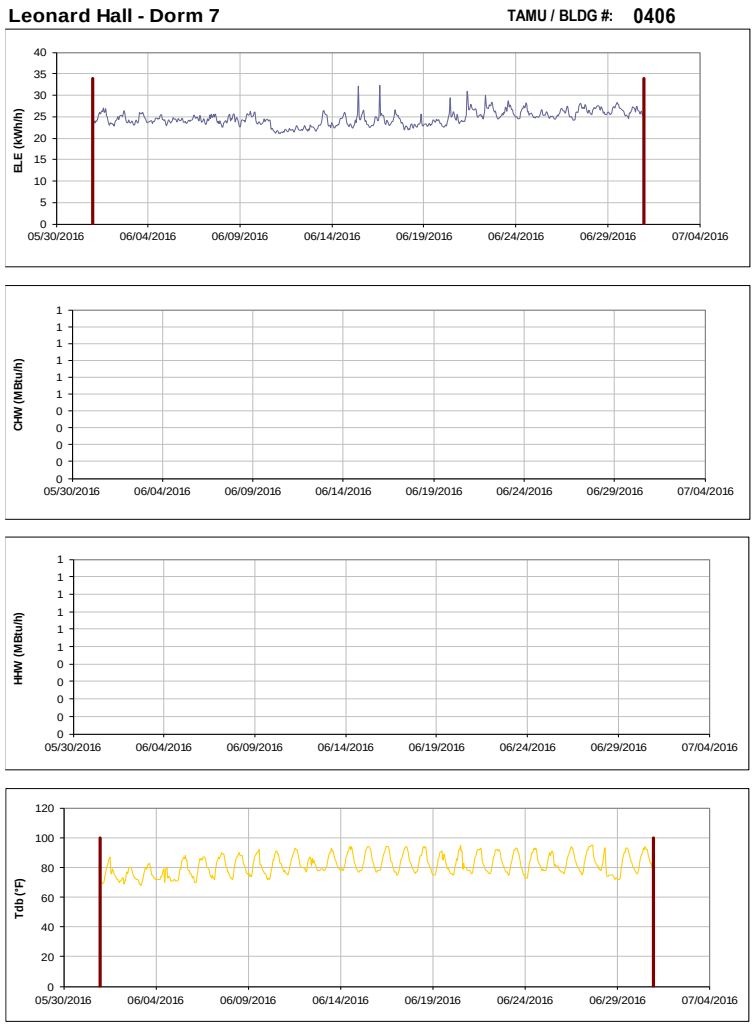


Figure III-36 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

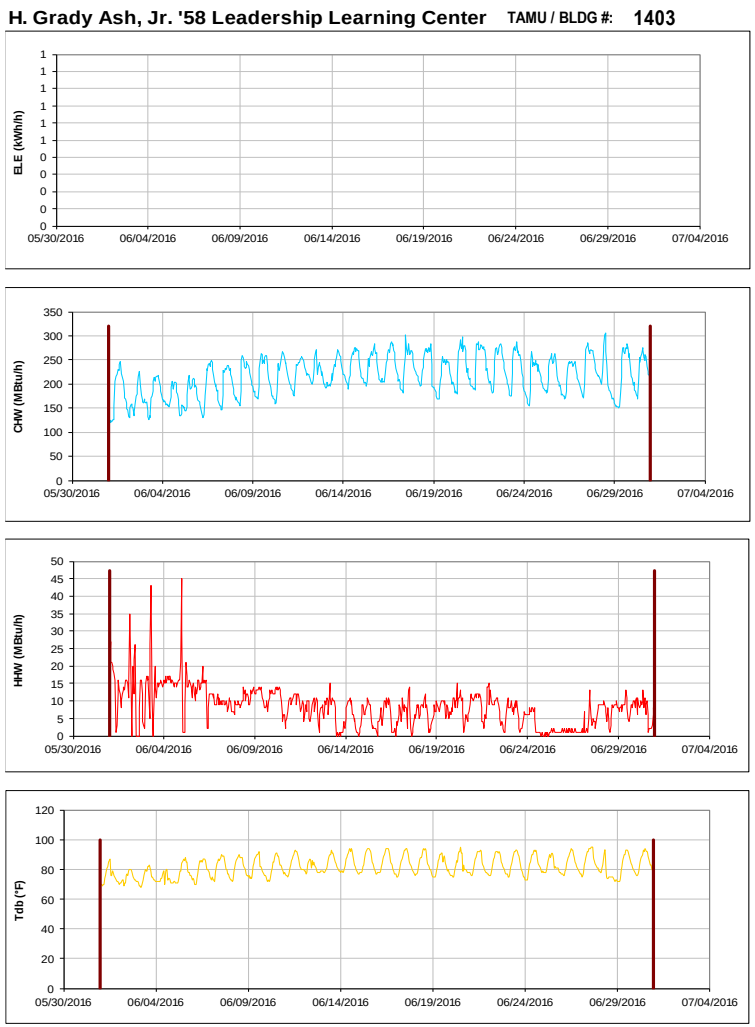


Figure III-37 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for H. Grady Ash, Jr. '58 Leadership Learning Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

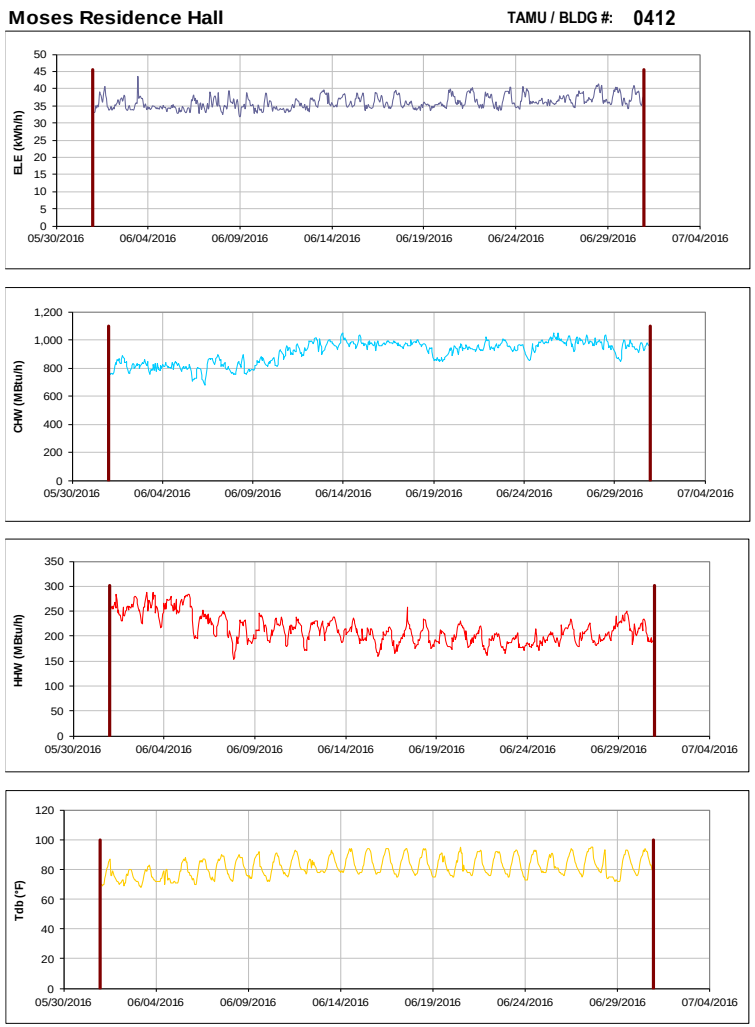


Figure III-38 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Moses Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

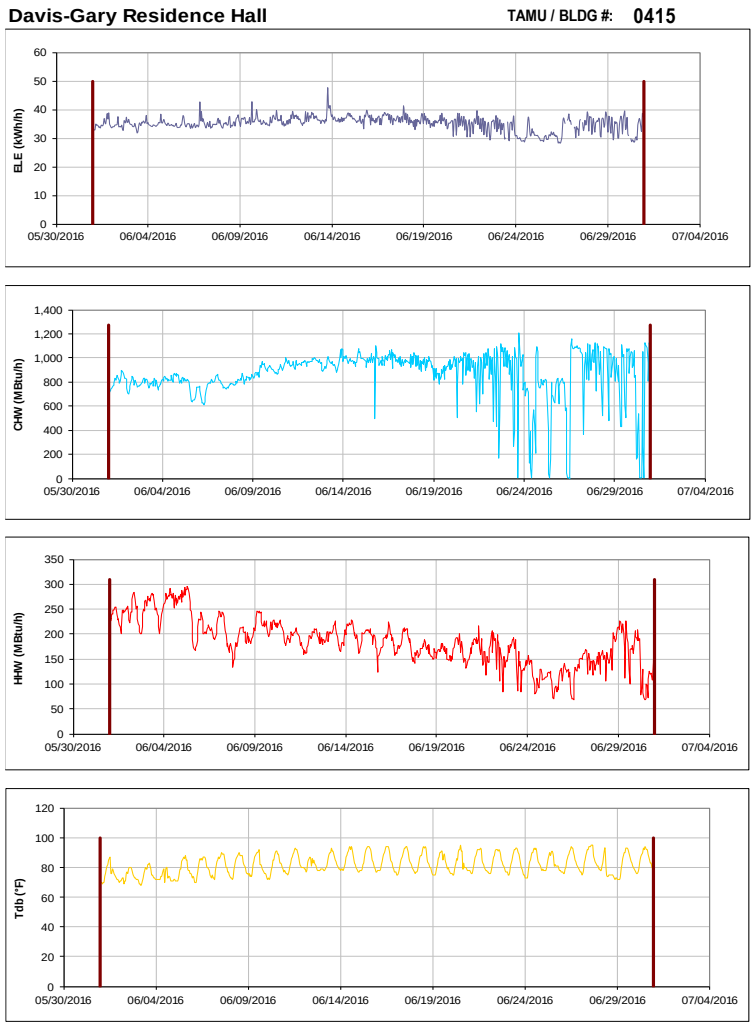


Figure III-39 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis-Gary Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

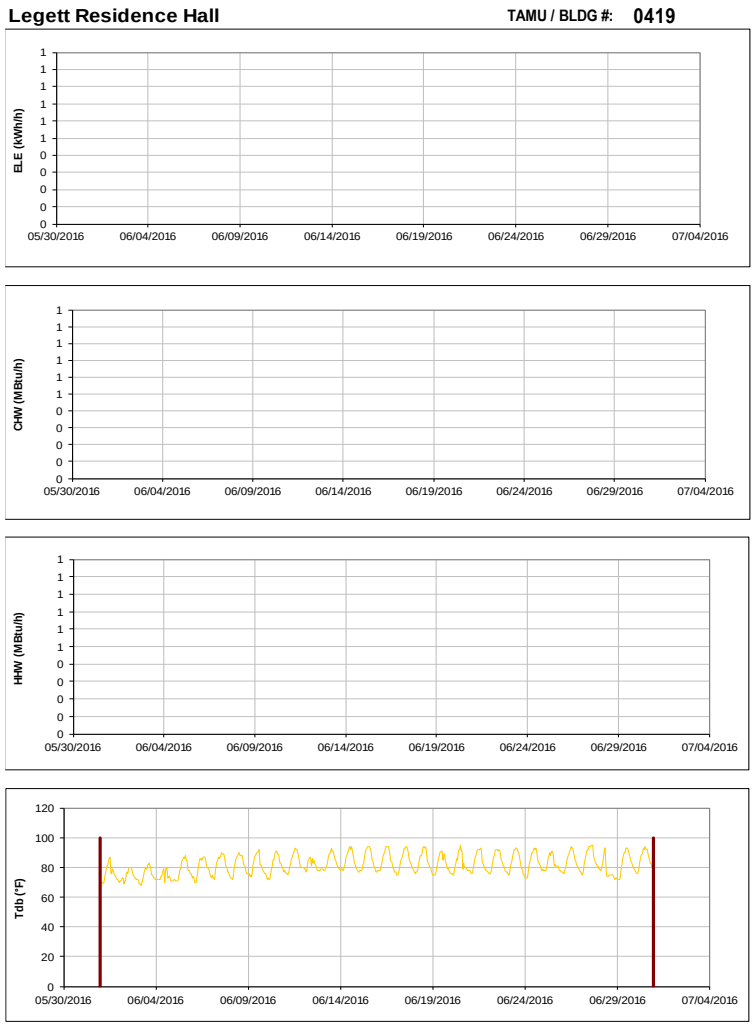


Figure III-40 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Legett Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

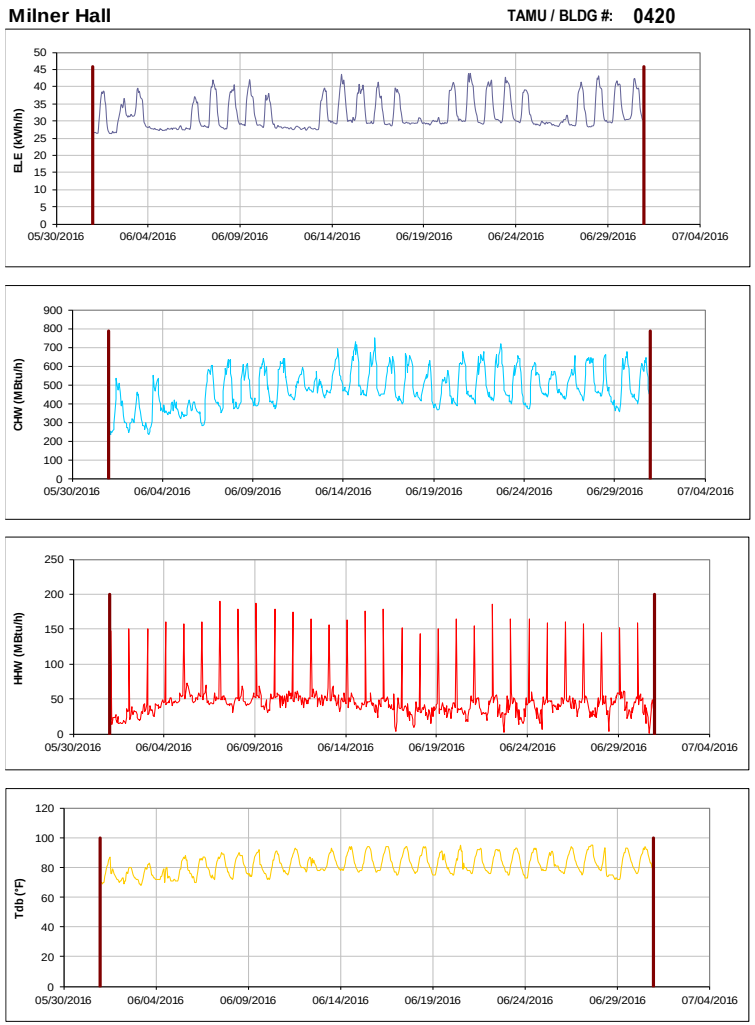


Figure III-41 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Milner Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

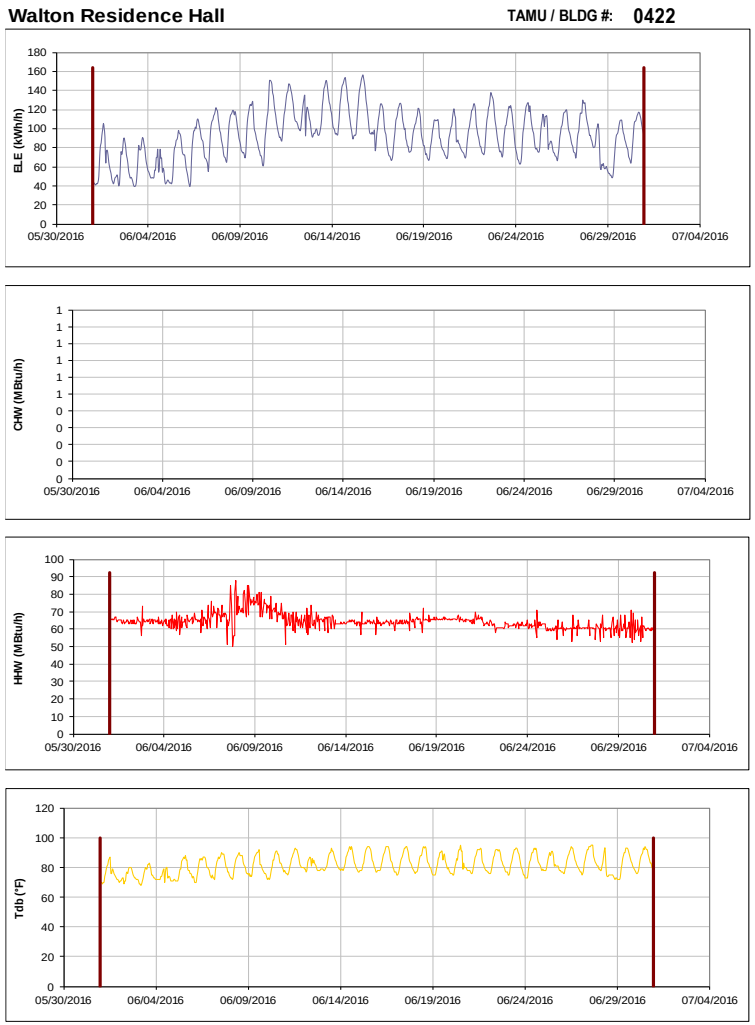


Figure III-42 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Walton Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

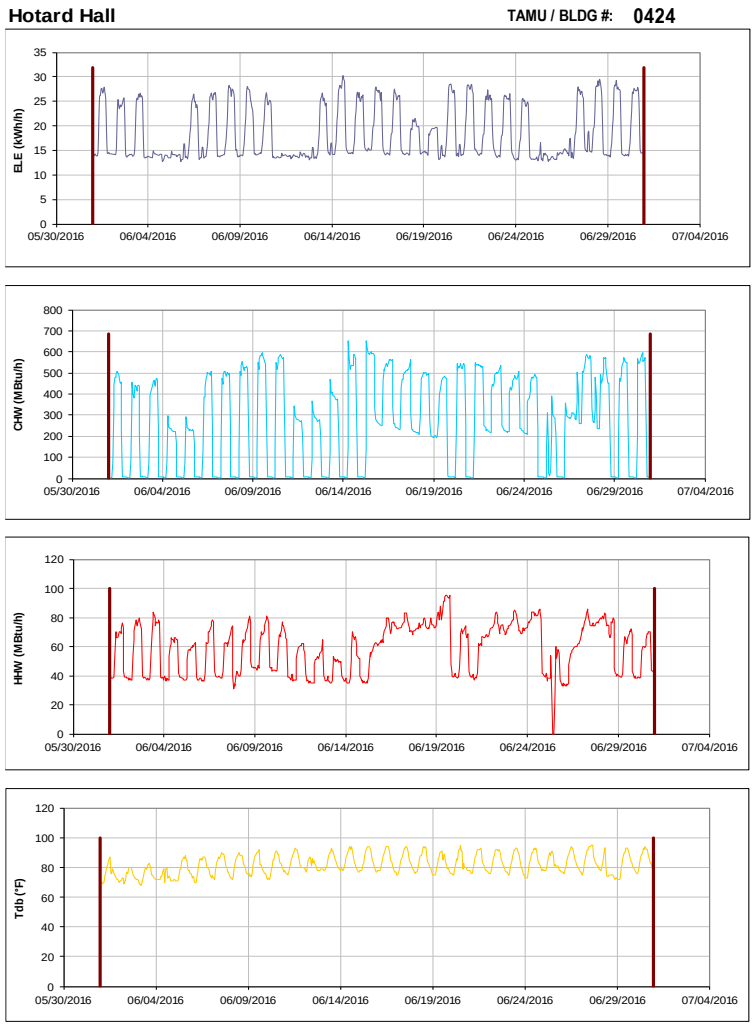


Figure III-43 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hotard Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

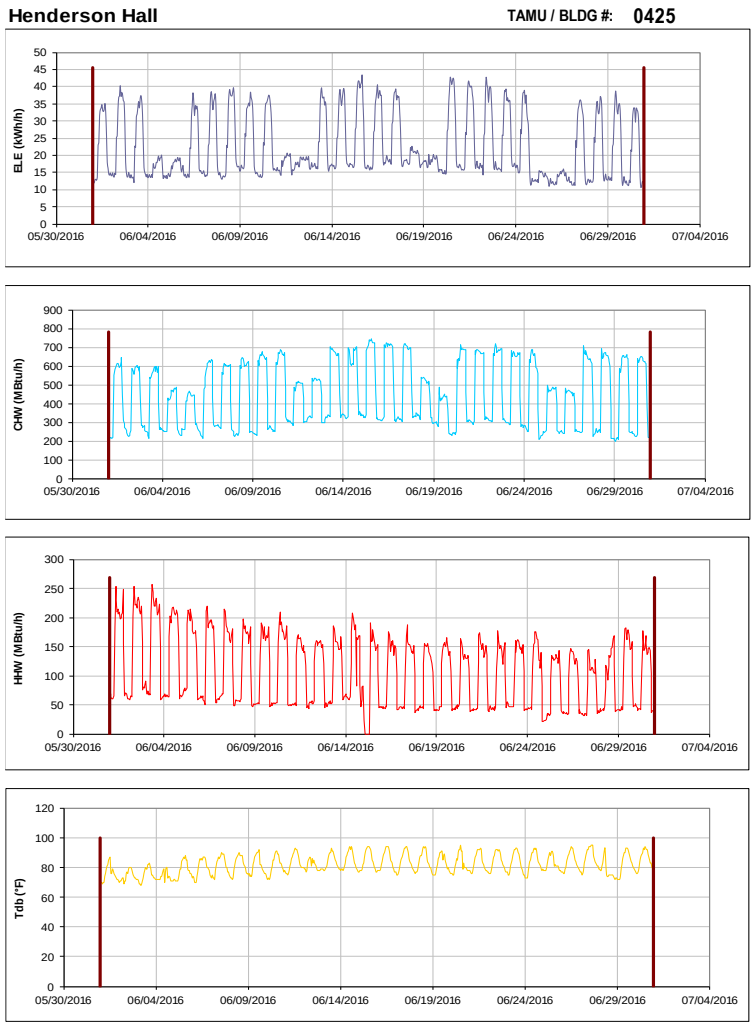


Figure III-44 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Henderson Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

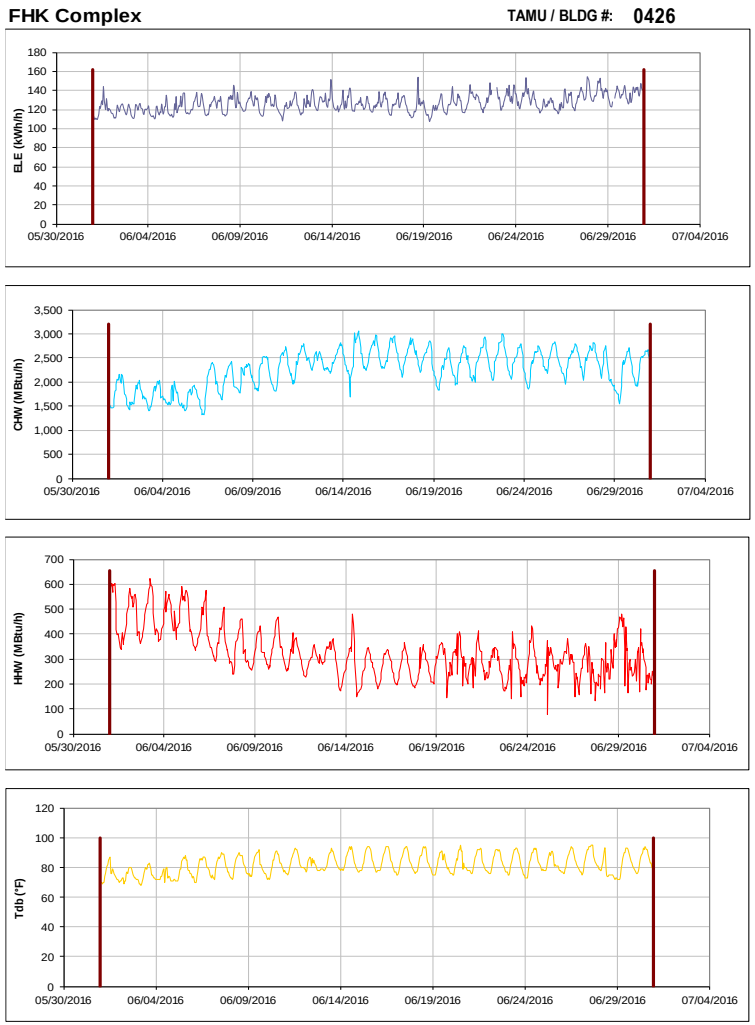


Figure III-45 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for FHK Complex during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

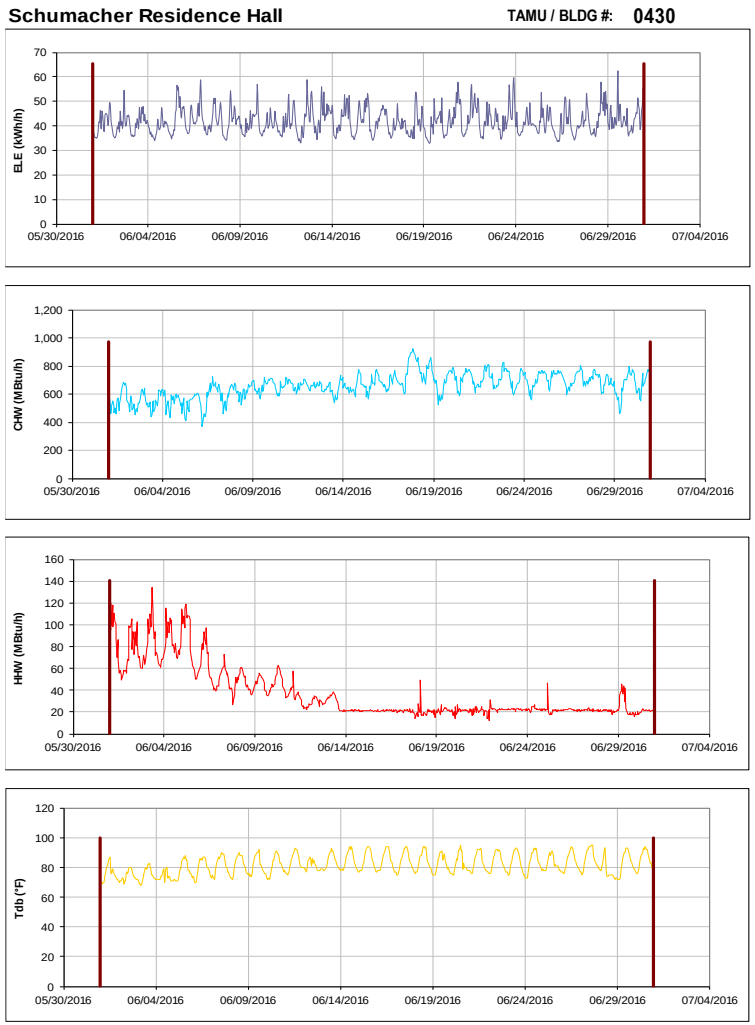


Figure III-46 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Schumacher Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

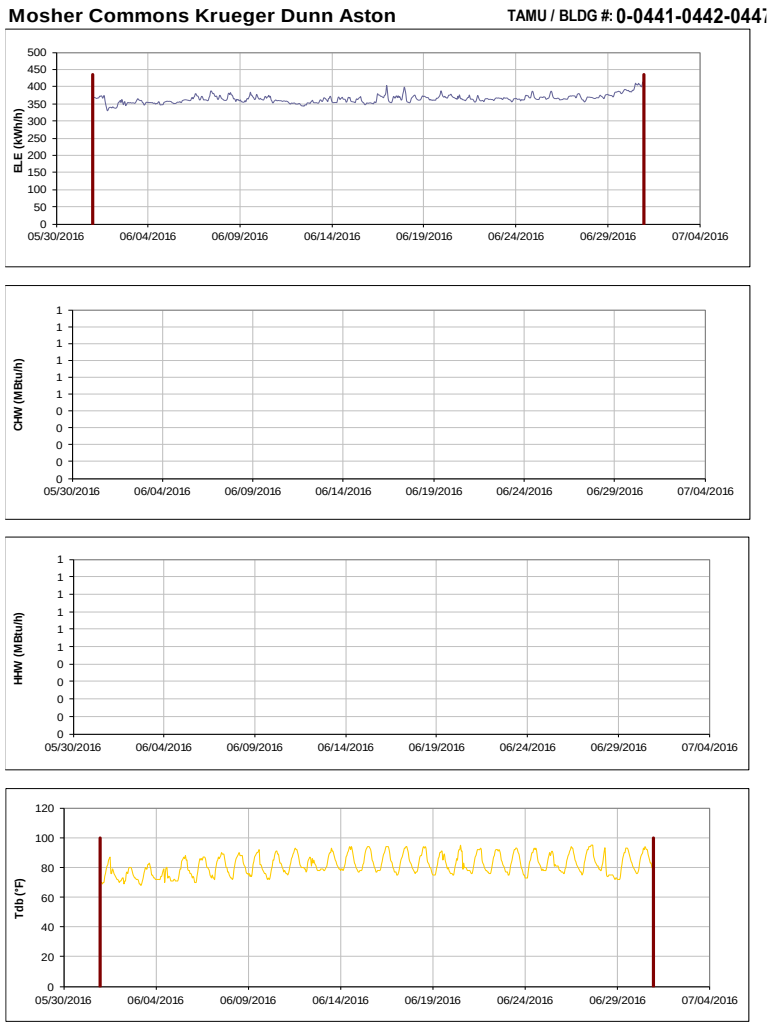


Figure III-47 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Commons Krueger Dunn Aston during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

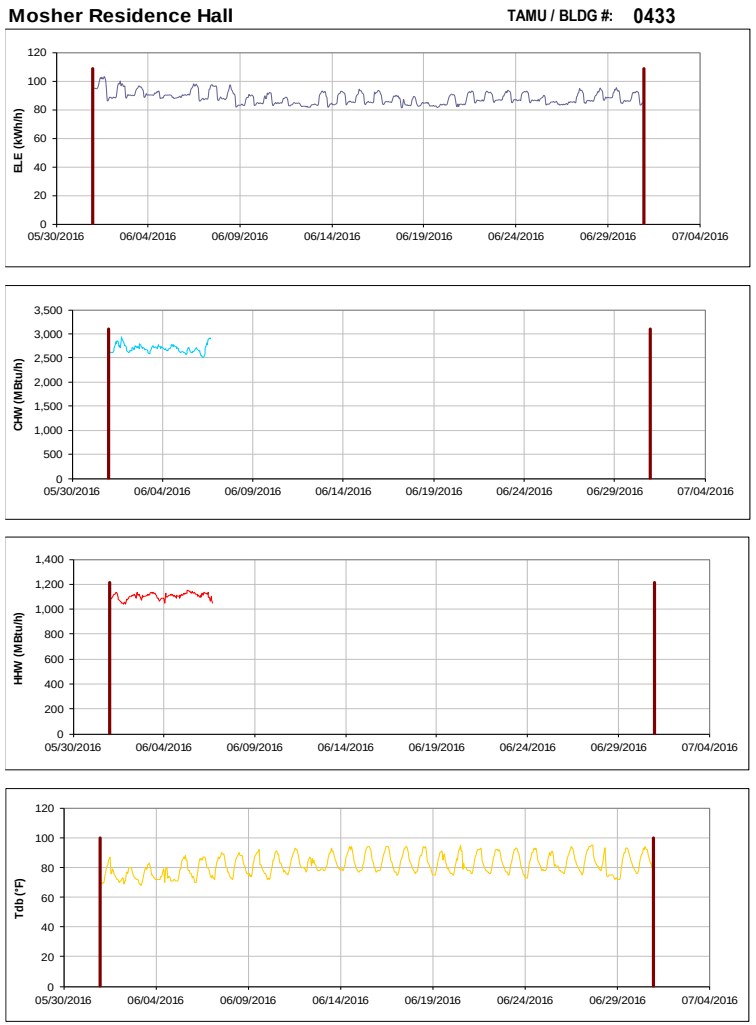


Figure III-48 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

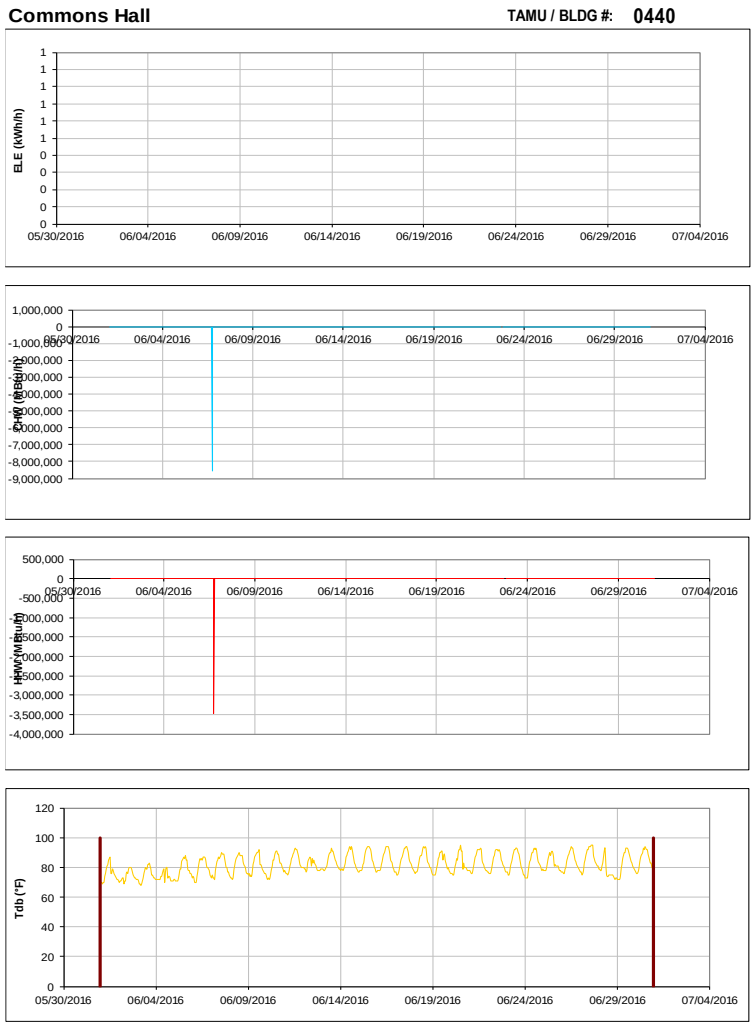


Figure III-49 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Commons Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

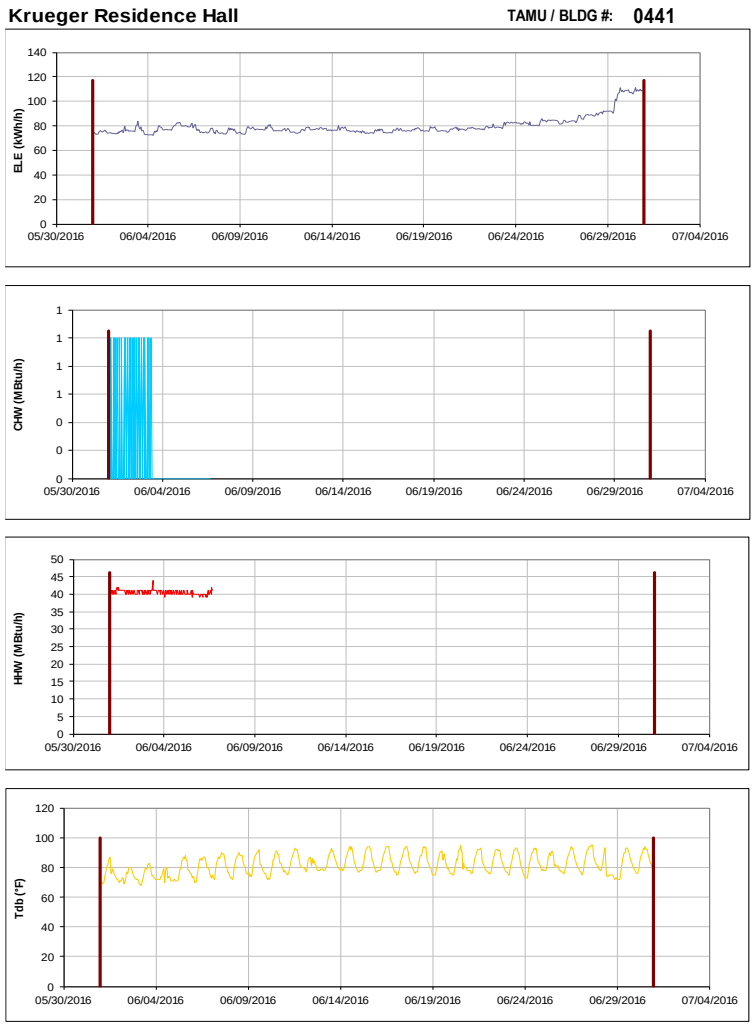


Figure III-50 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Krueger Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

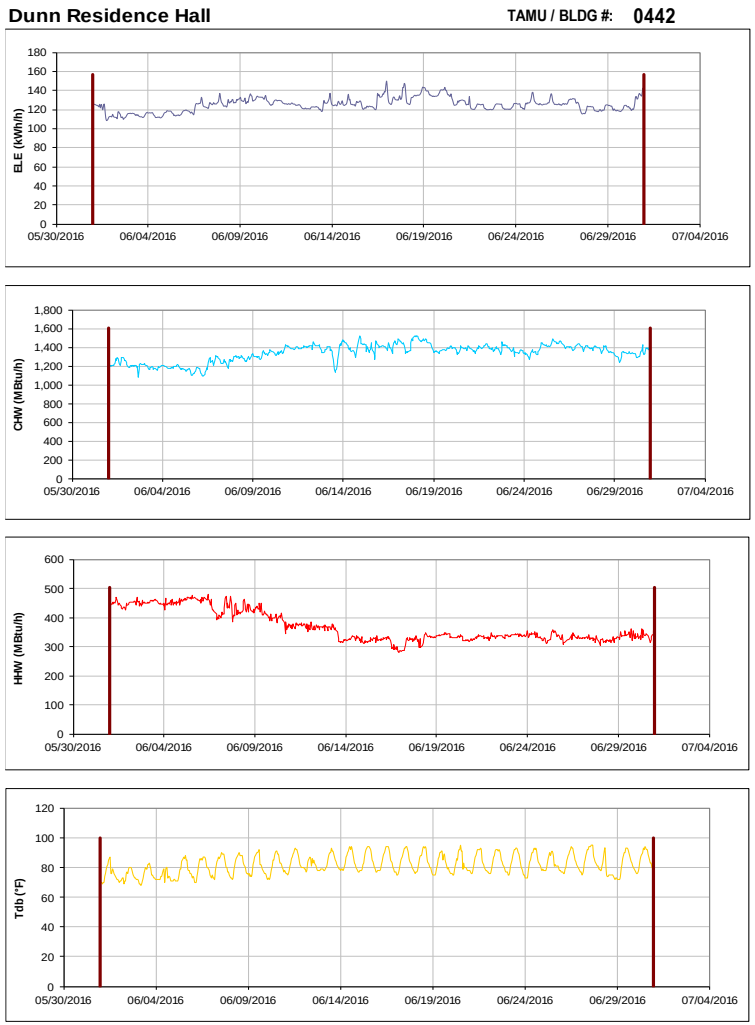


Figure III-51 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Dunn Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

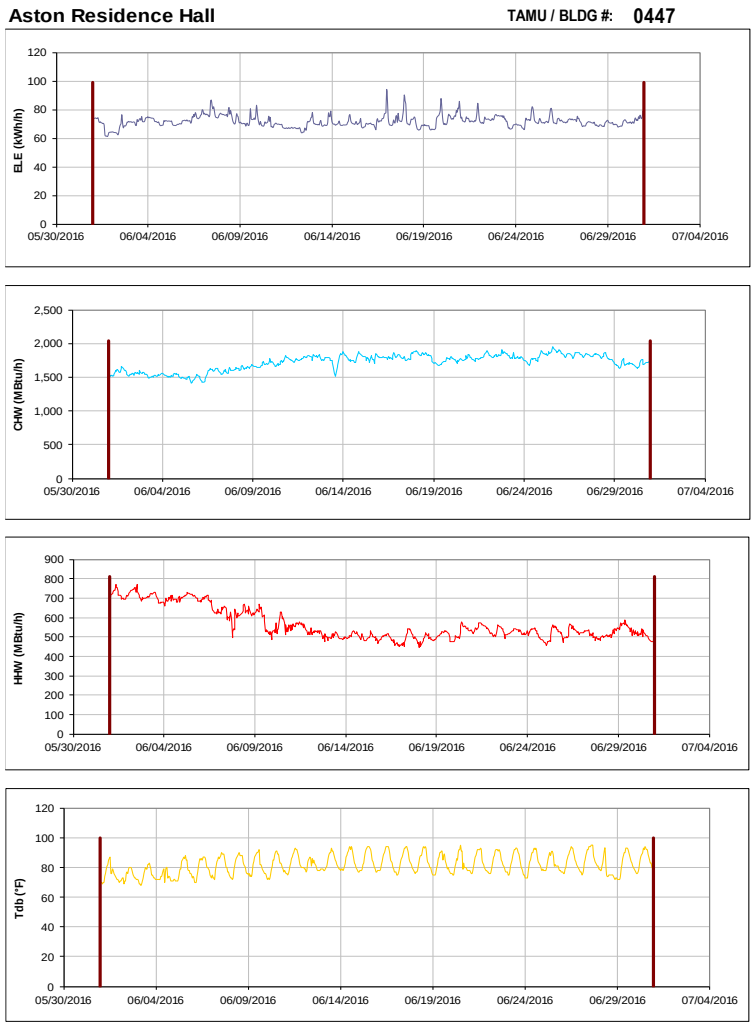


Figure III-52 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Aston Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

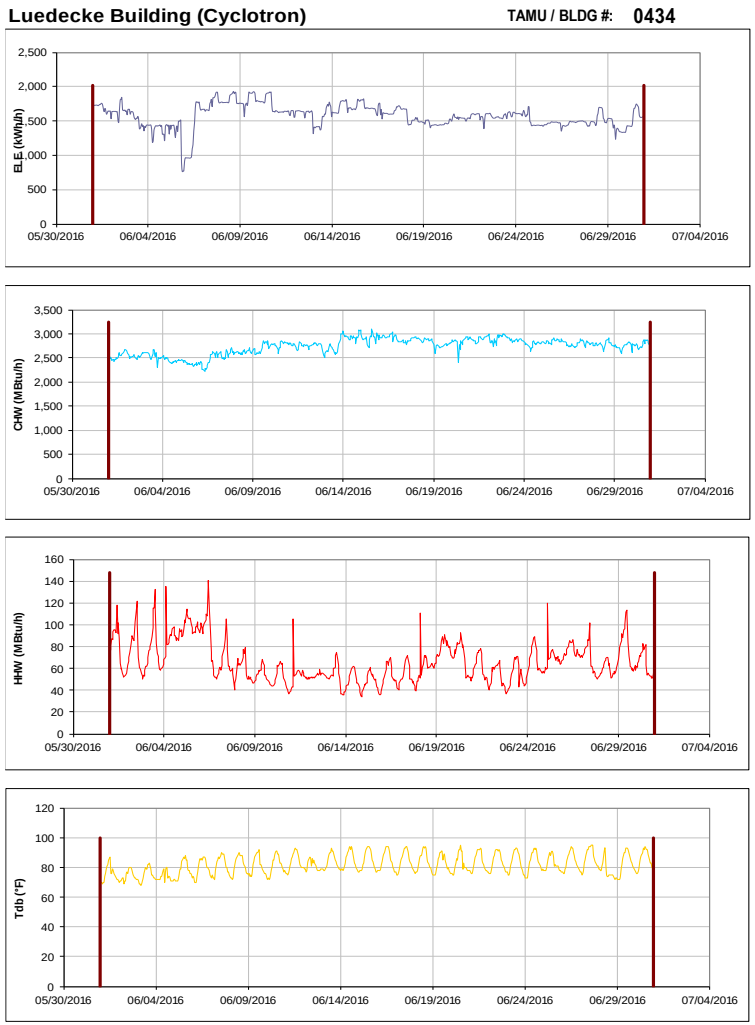


Figure III-53 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Luedecke Building (Cyclotron) during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

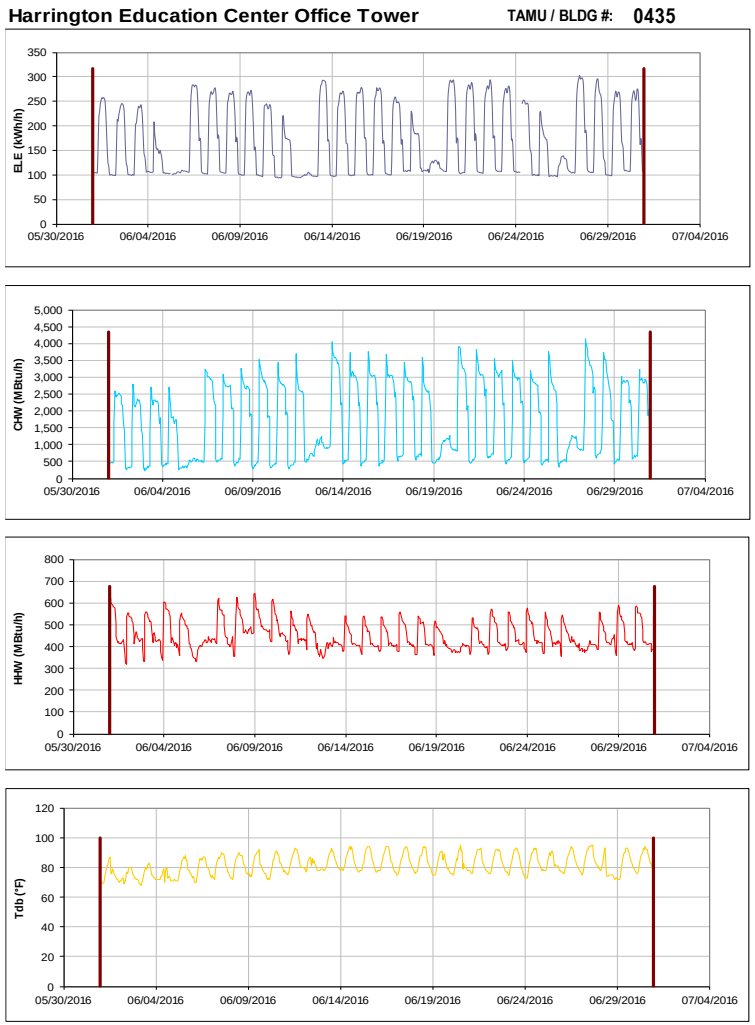


Figure III-54 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Office Tower during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

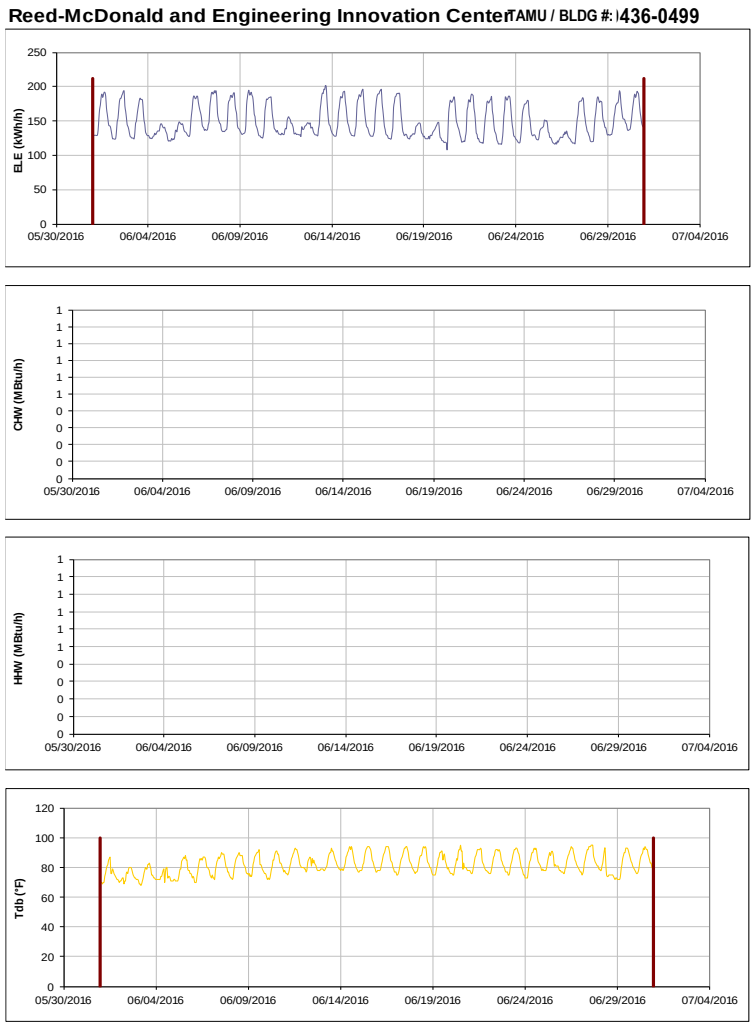


Figure III-55 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald and Engineering Innovation Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

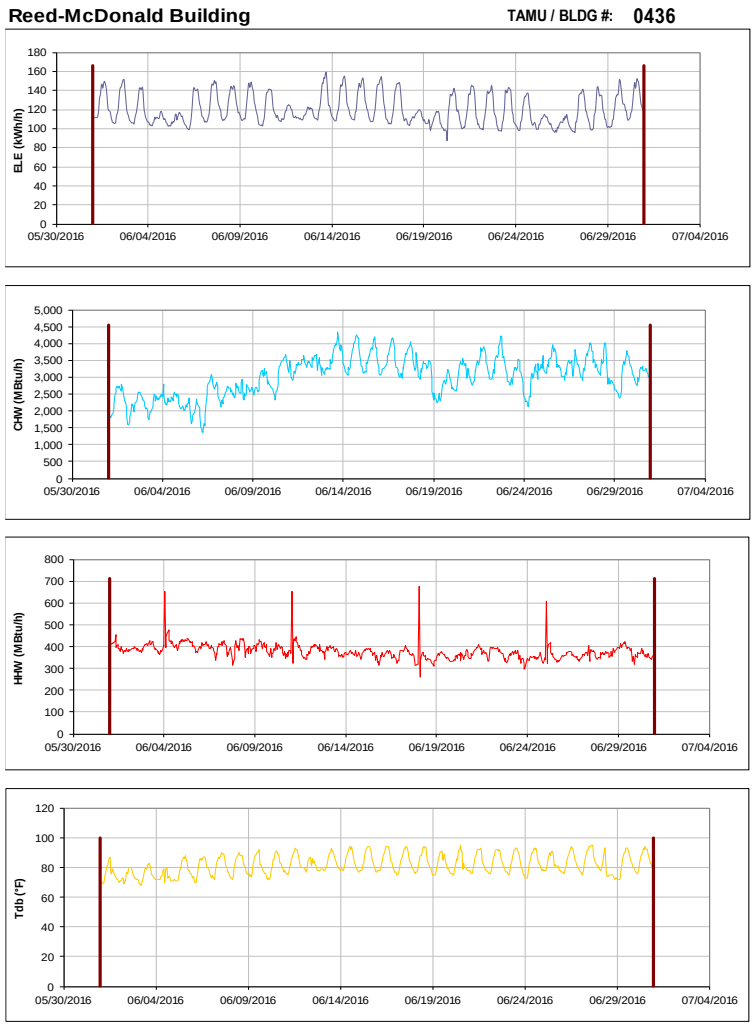


Figure III-56 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

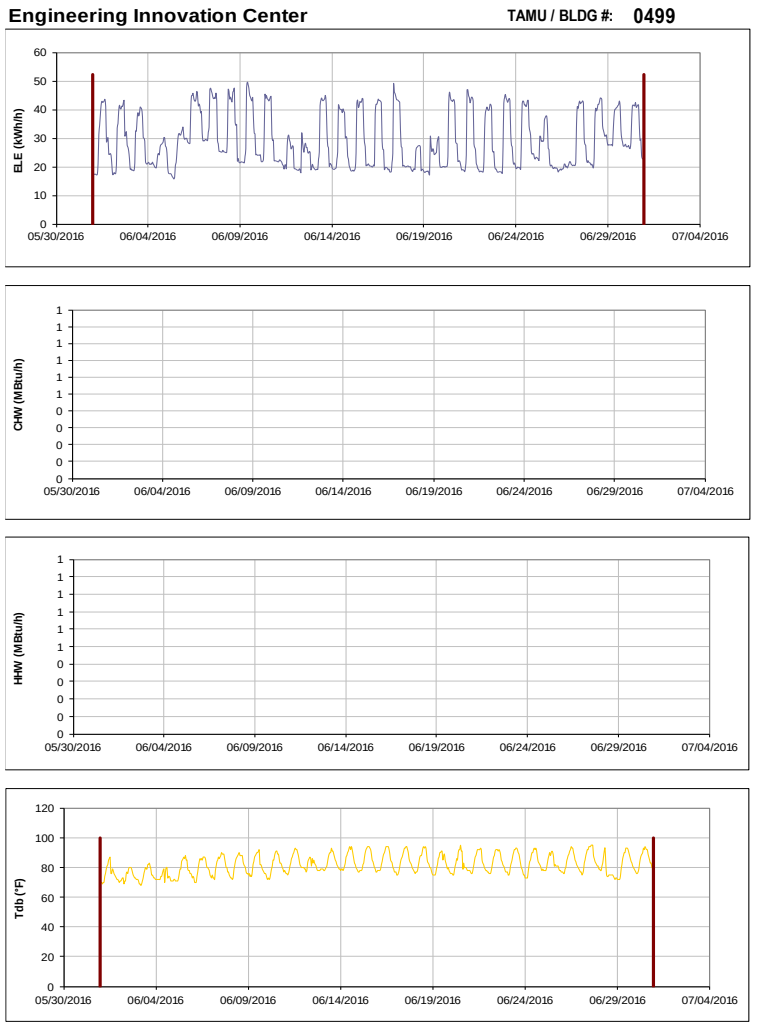


Figure III-57 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Innovation Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

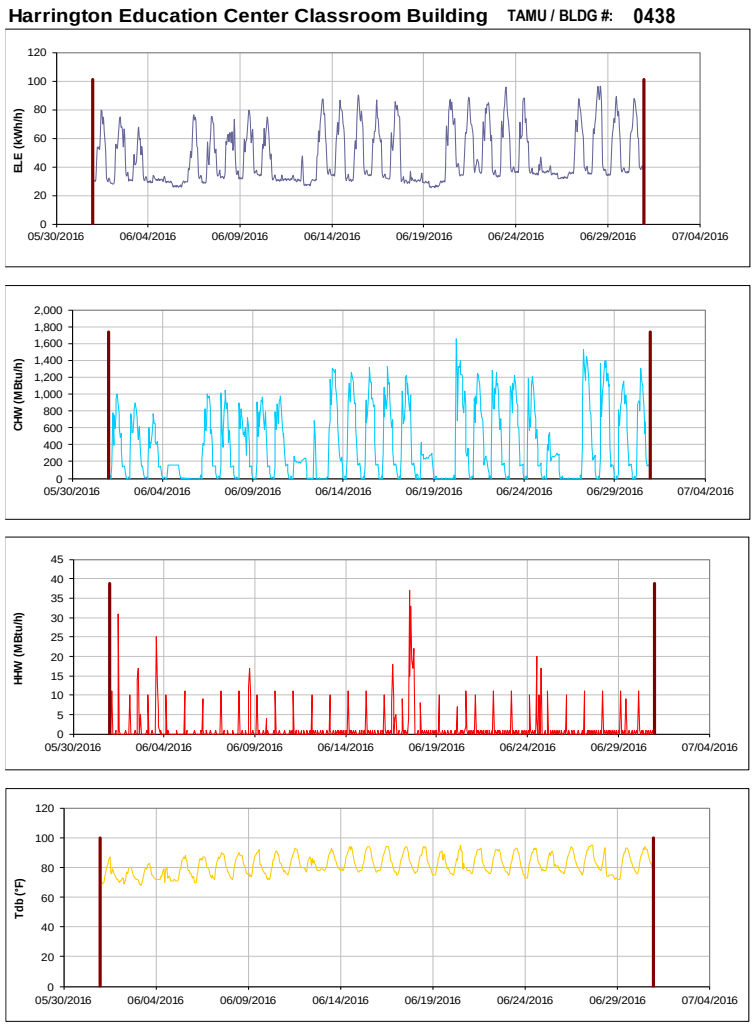


Figure III-58 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Classroom Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

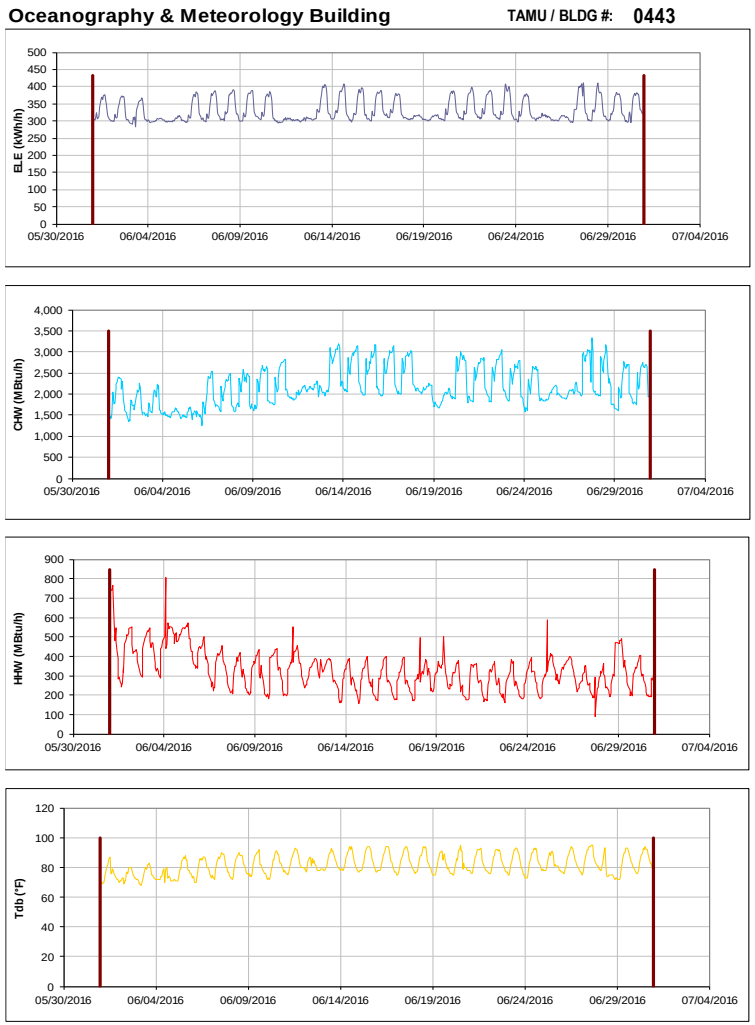


Figure III-59 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Oceanography & Meteorology Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

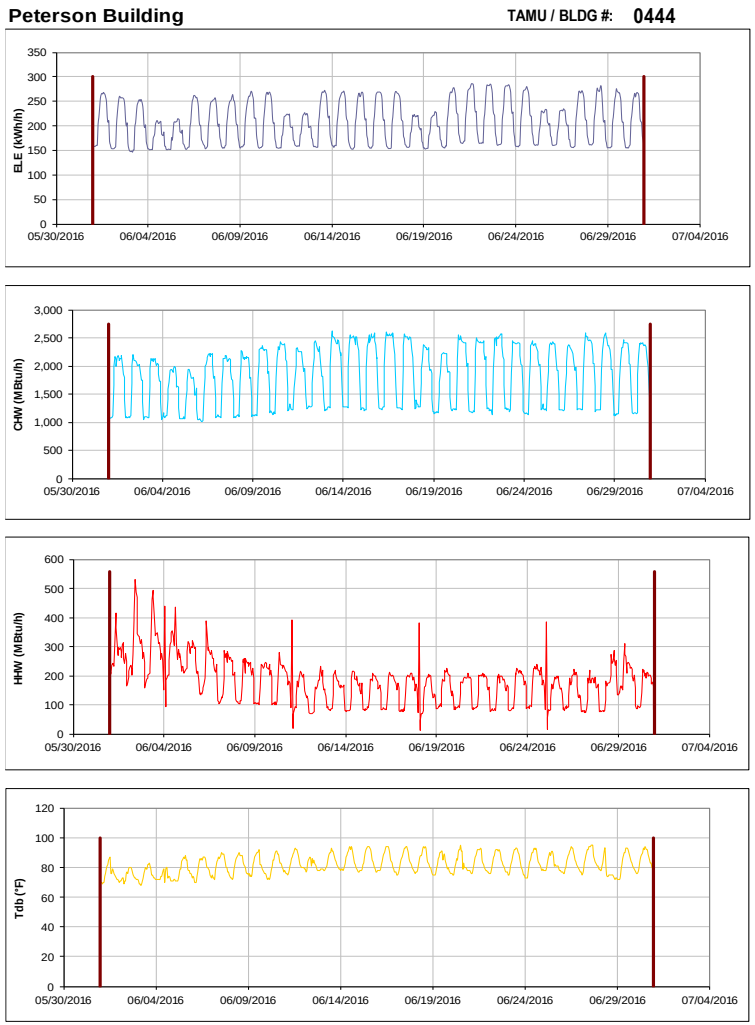


Figure III-60 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Peterson Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

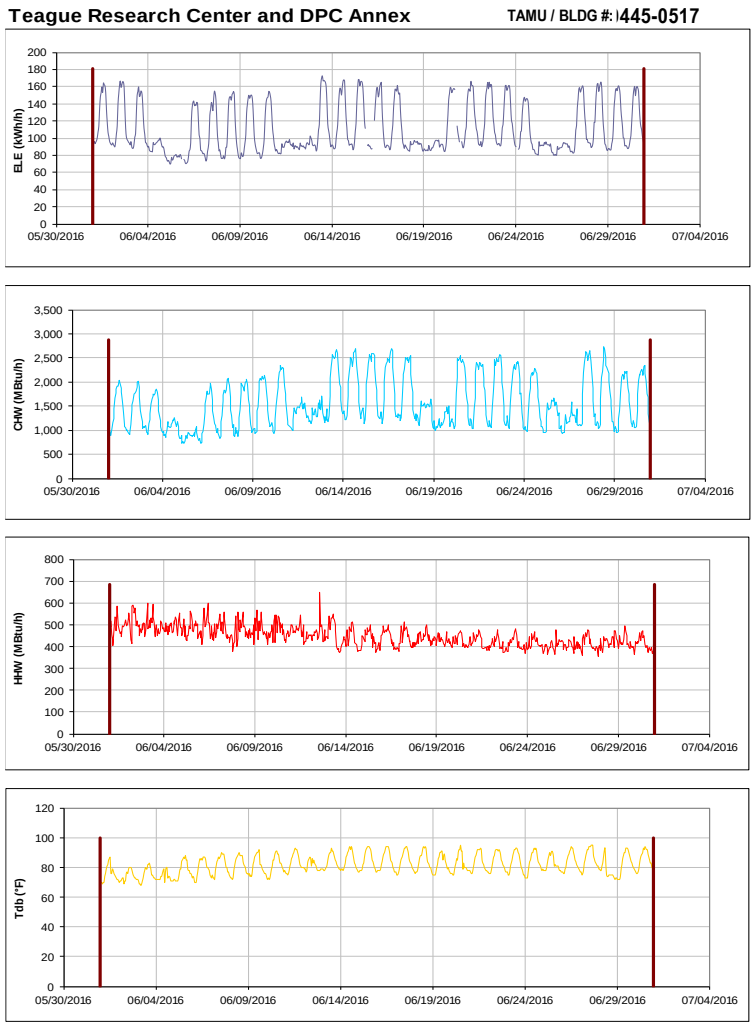


Figure III-61 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center and DPC Annex during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

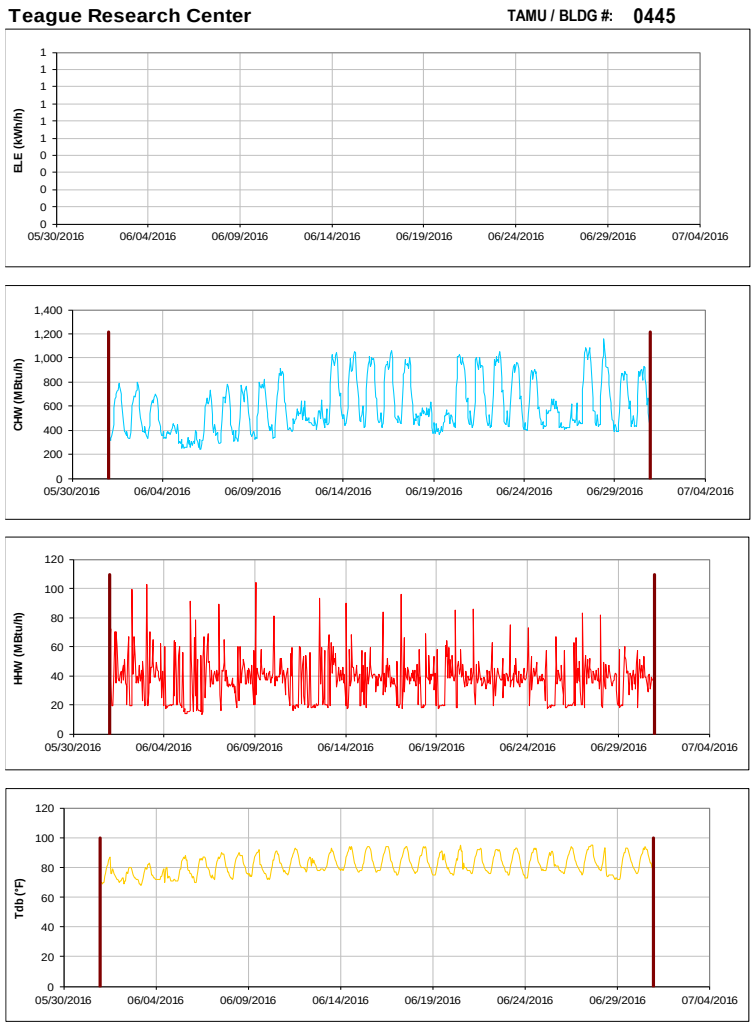


Figure III-62 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

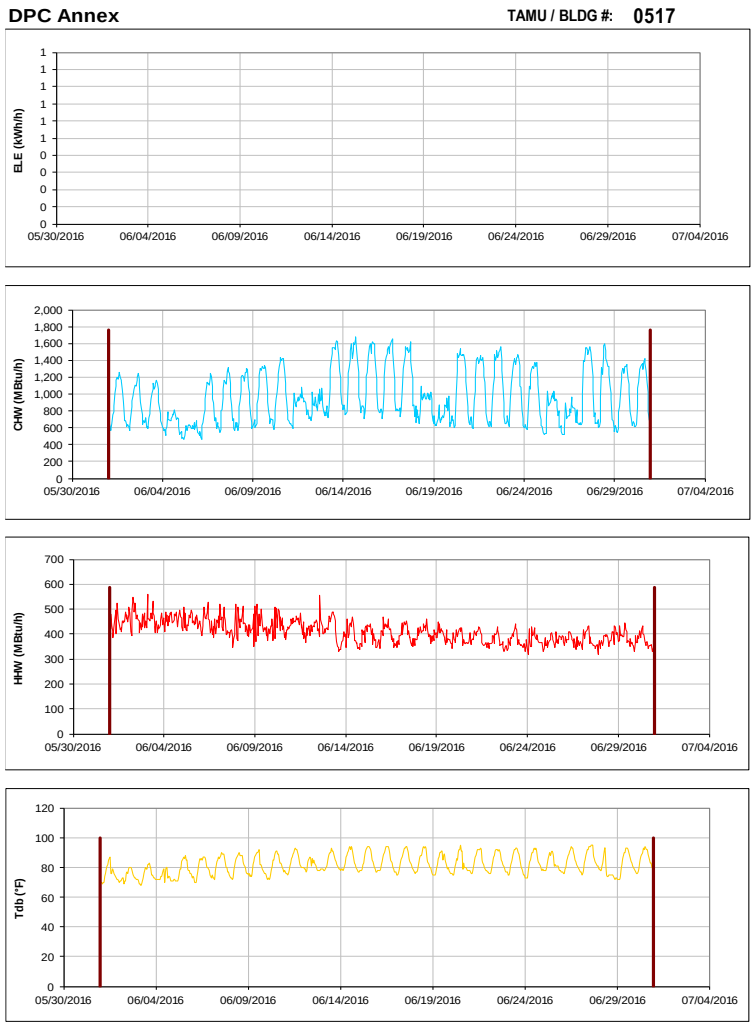


Figure III-63 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for DPC Annex during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

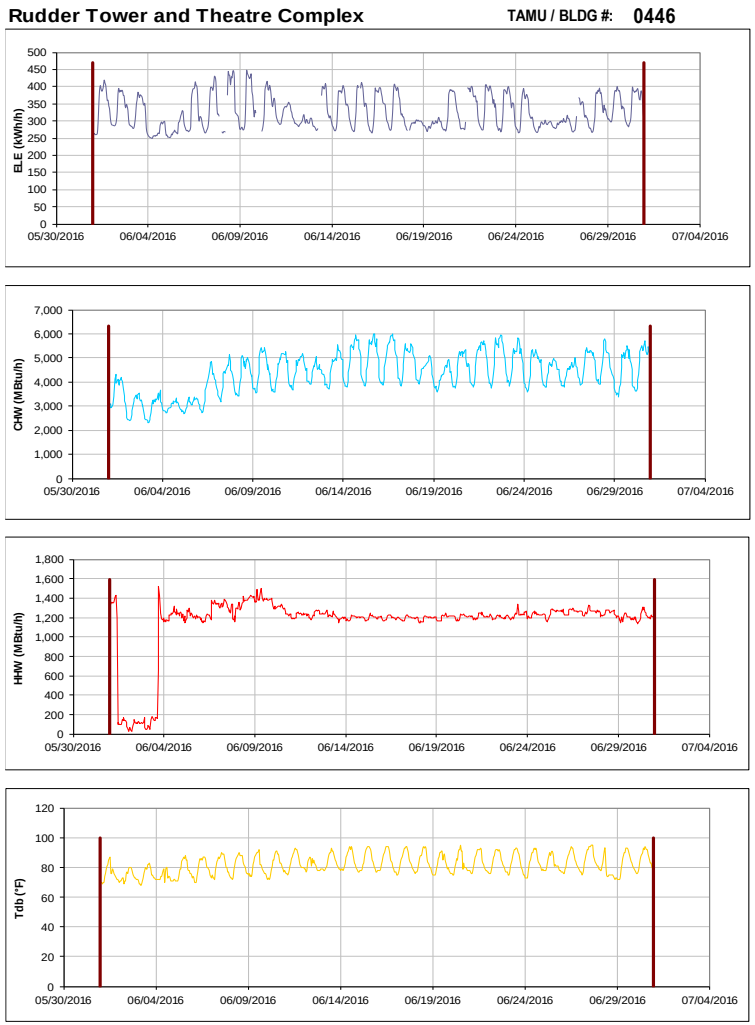


Figure III-64 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower and Theatre Complex during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

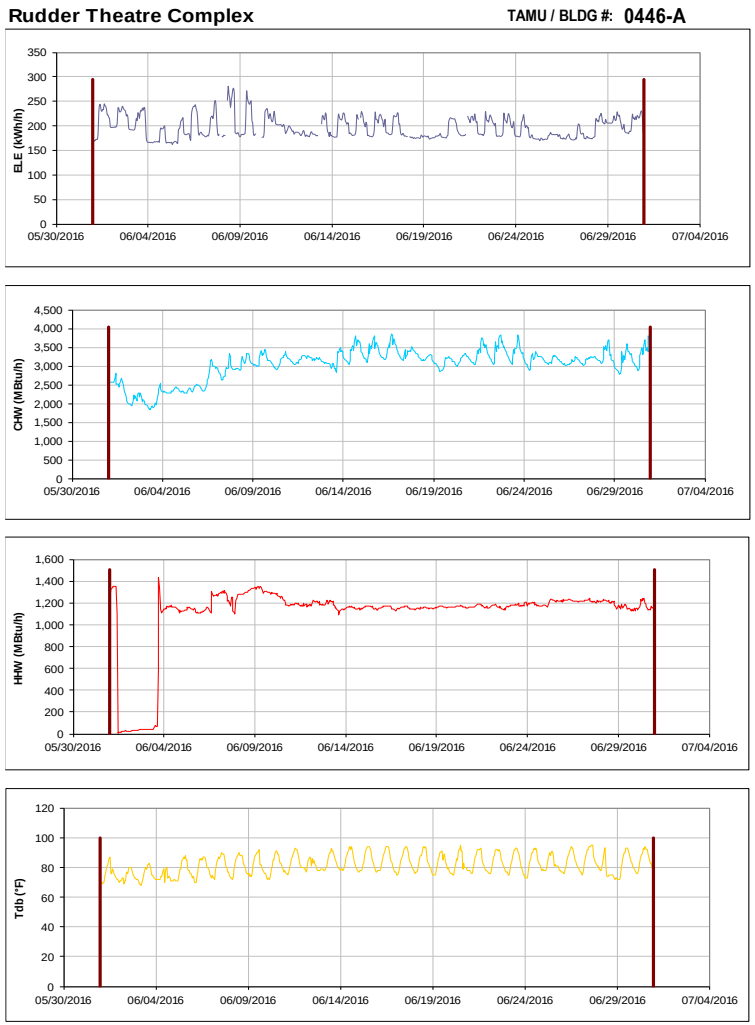


Figure III-65 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Theatre Complex during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

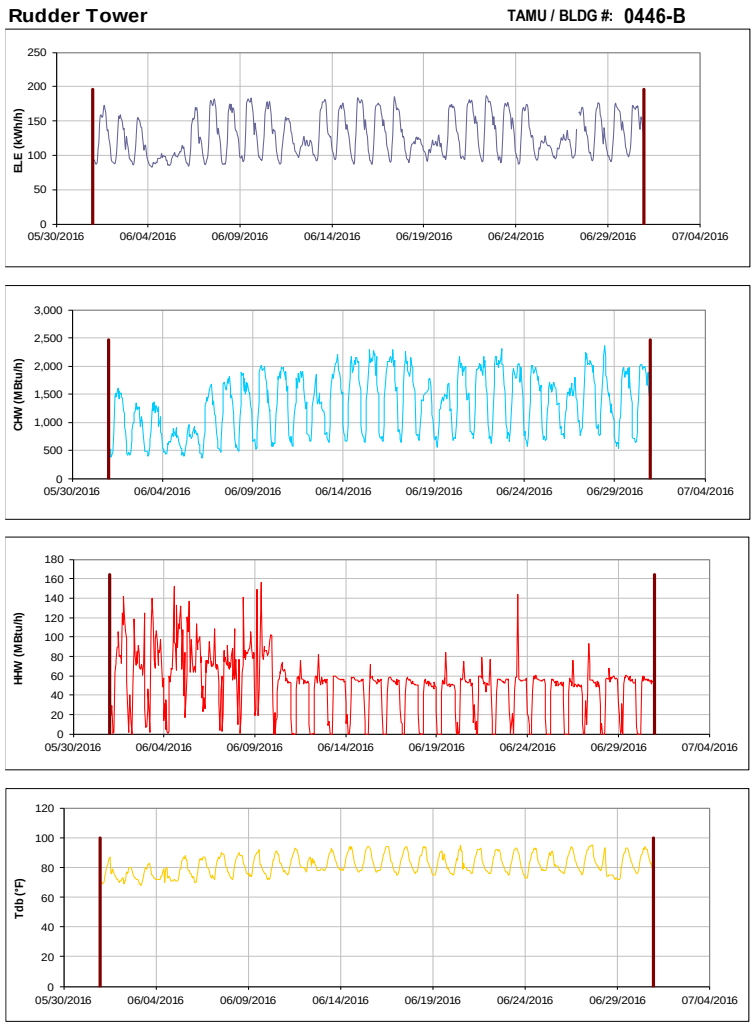


Figure III-66 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

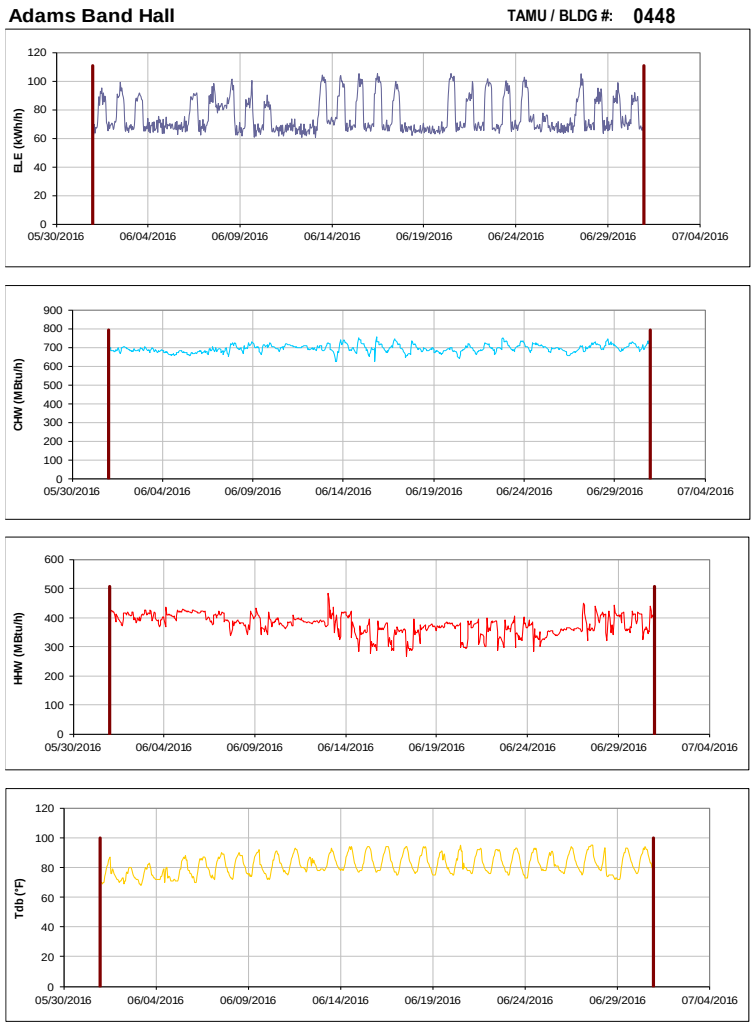


Figure III-67 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Adams Band Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

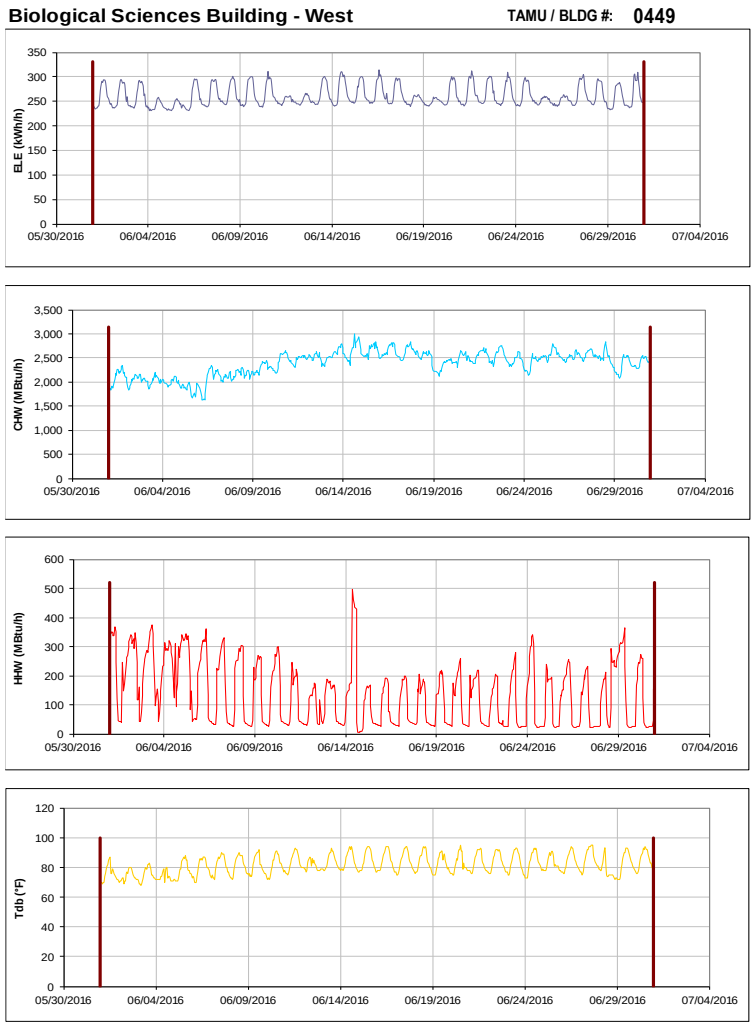


Figure III-68 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - West during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

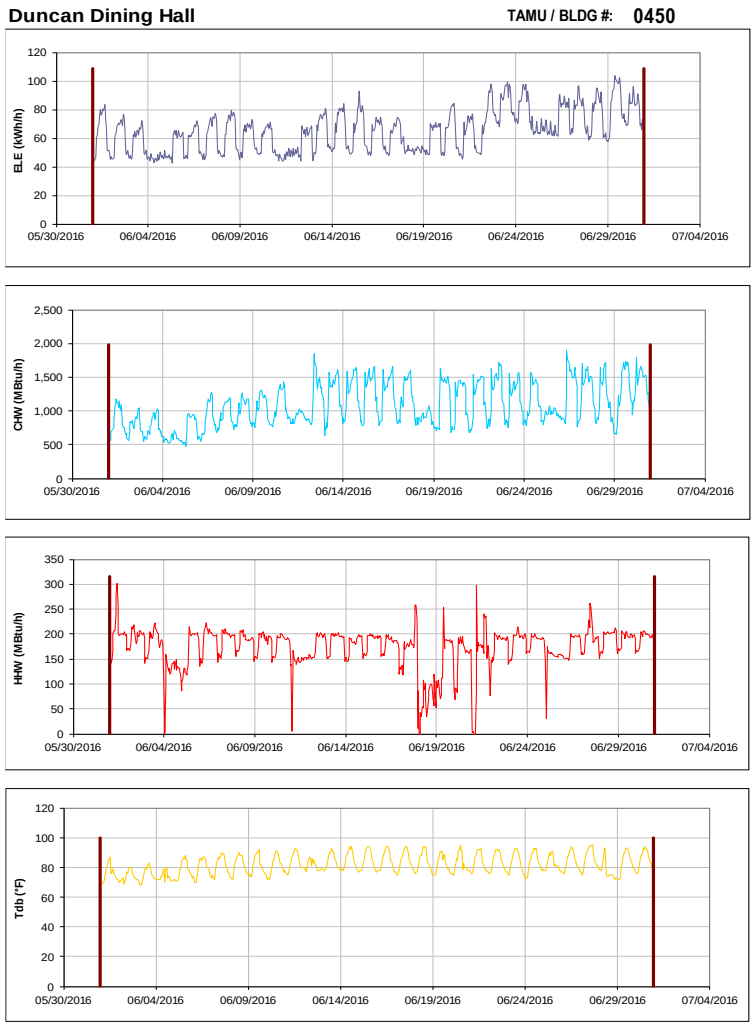


Figure III-69 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Duncan Dining Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

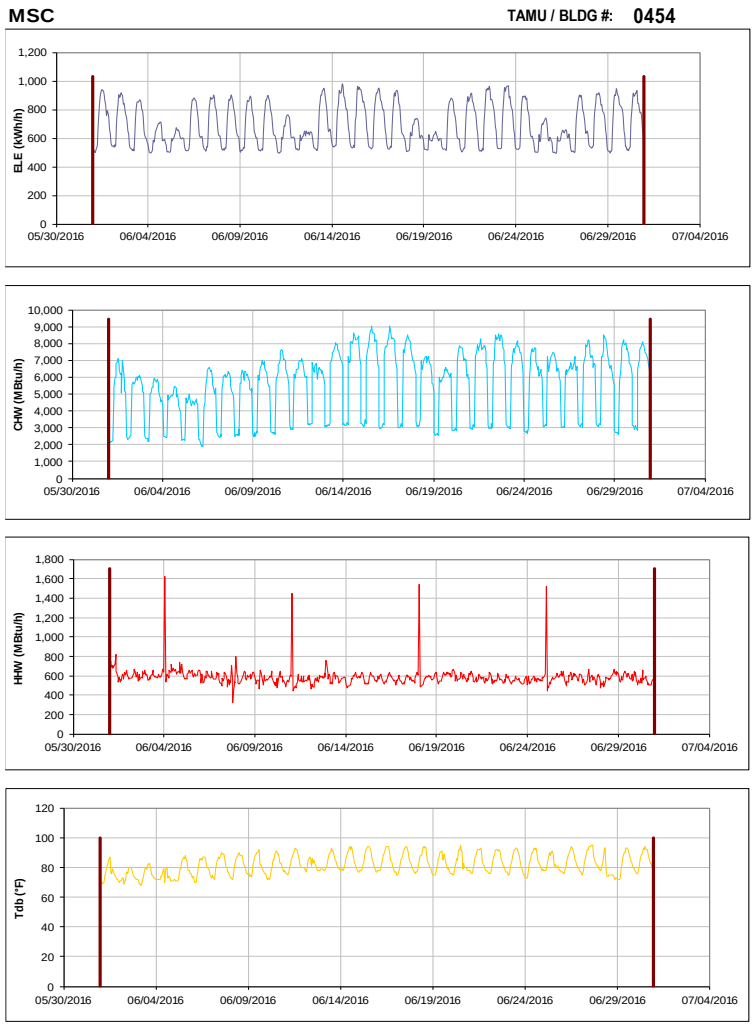


Figure III-70 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for MSC during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

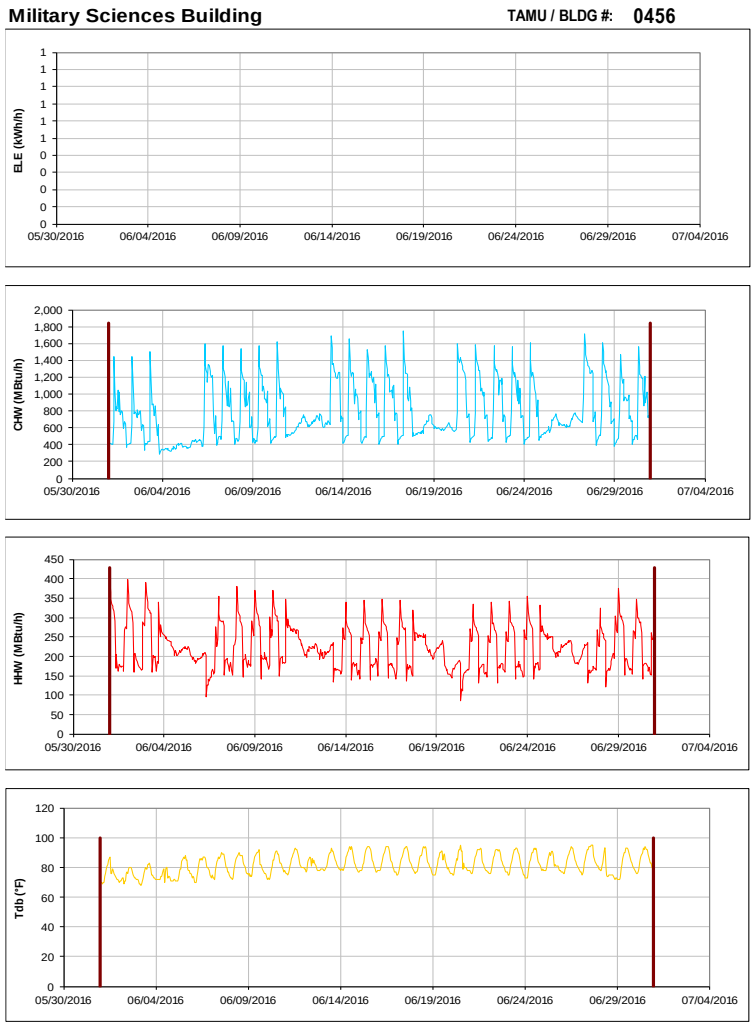


Figure III-71 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Military Sciences Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

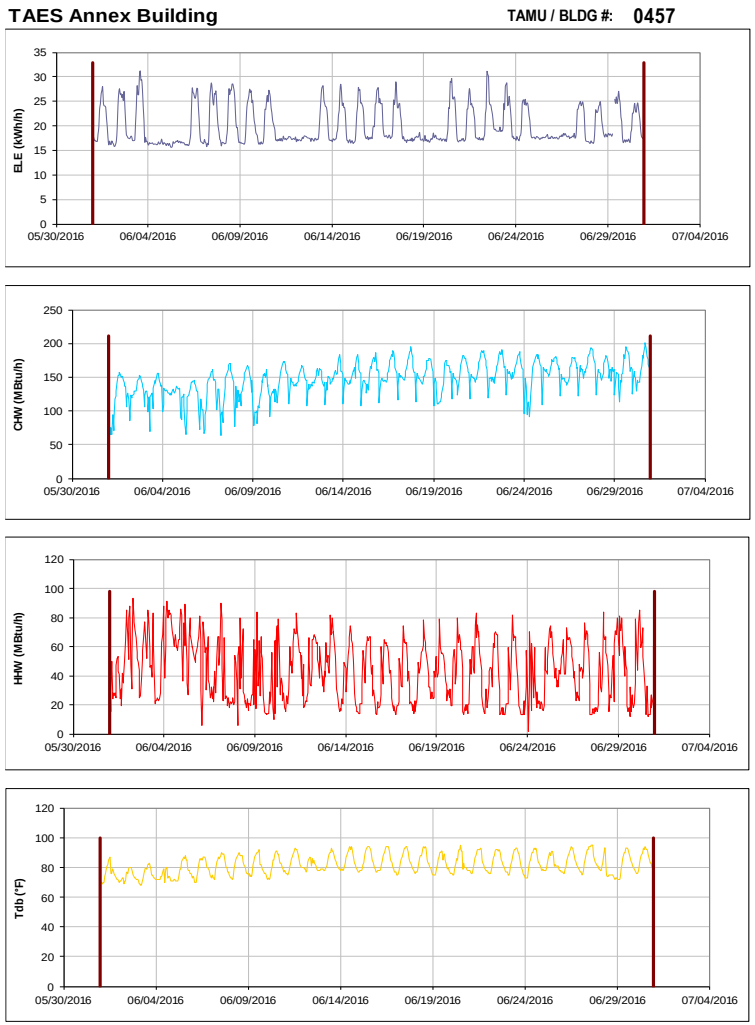


Figure III-72 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TAES Annex Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

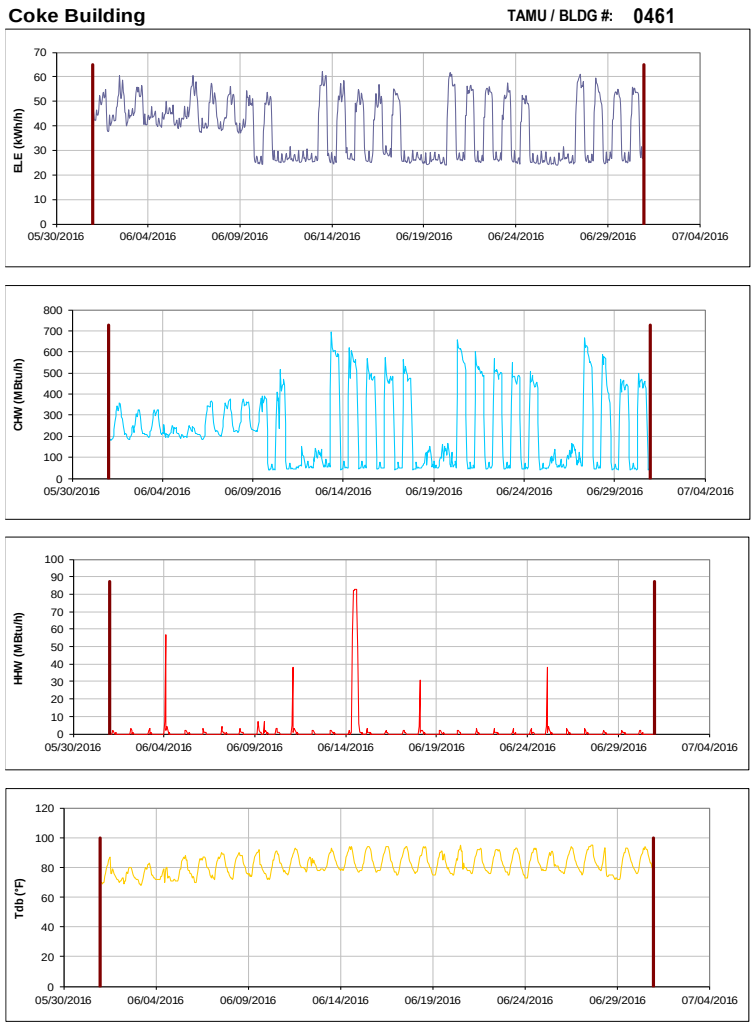


Figure III-73 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Coke Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

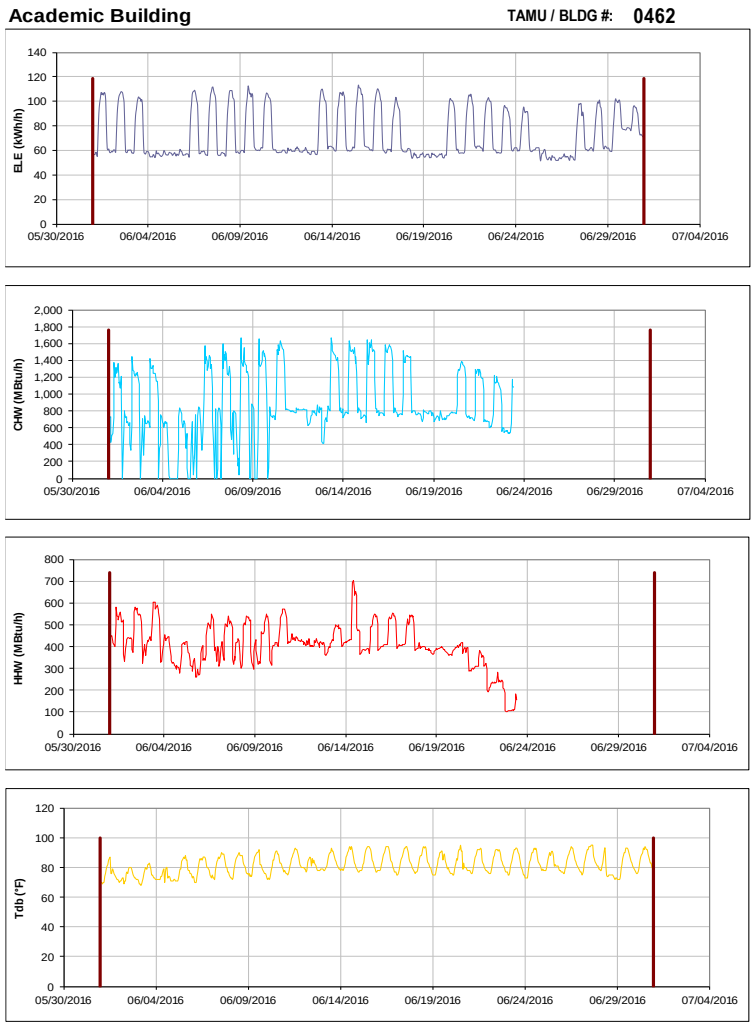


Figure III-74 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Academic Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

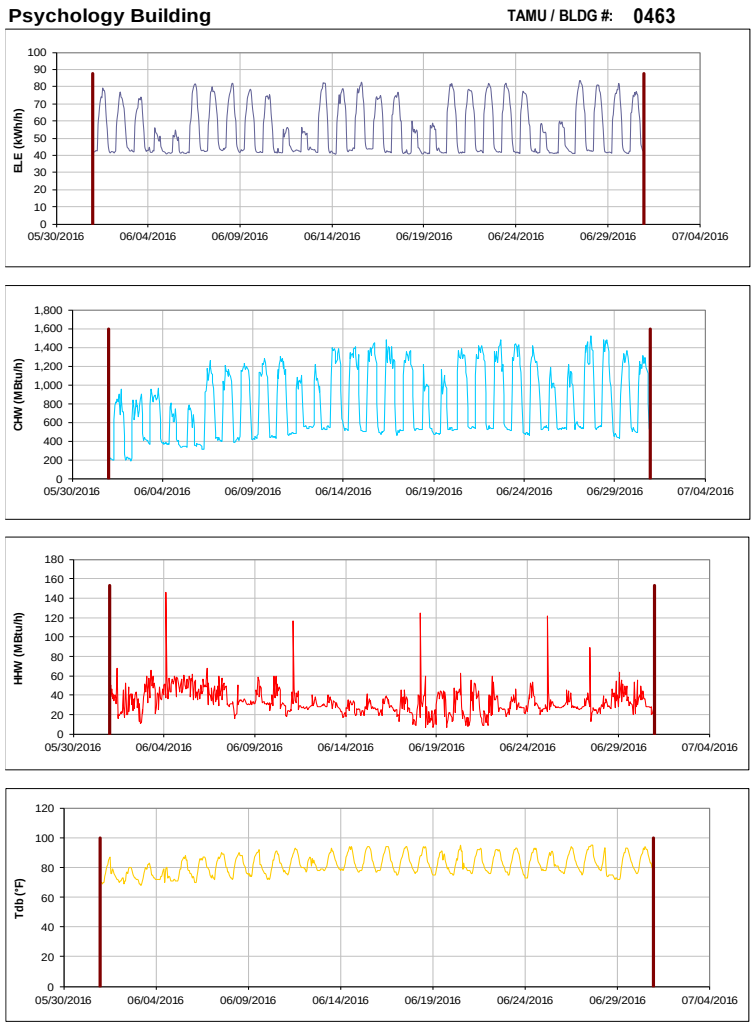


Figure III-75 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Psychology Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

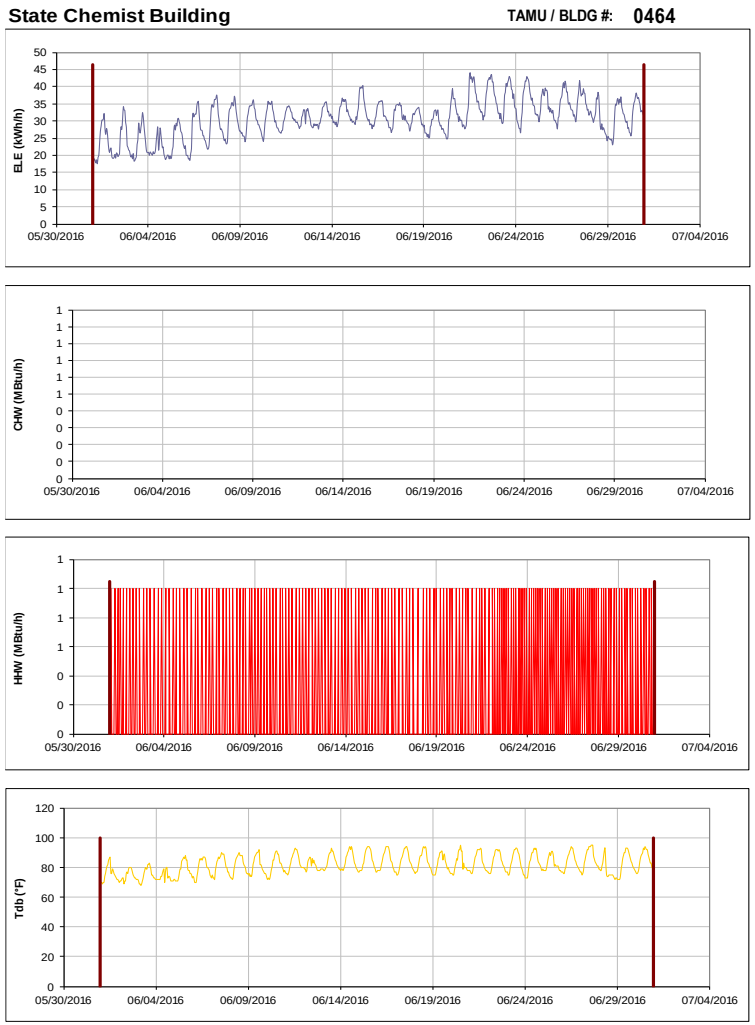


Figure III-76 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for State Chemist Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

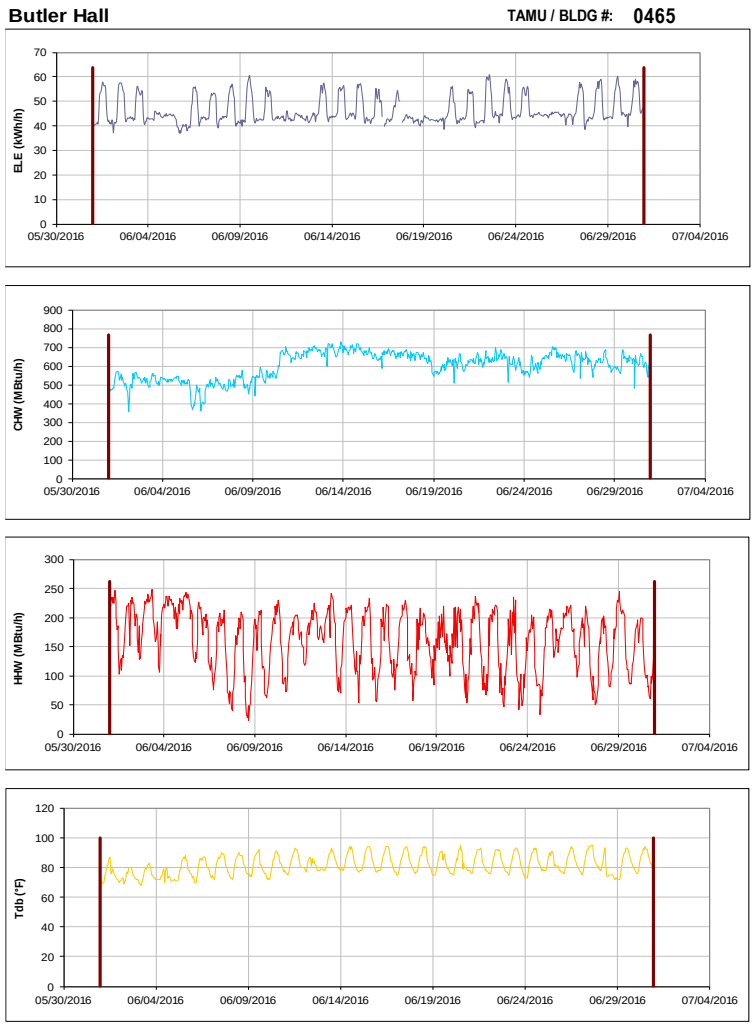


Figure III-77 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Butler Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

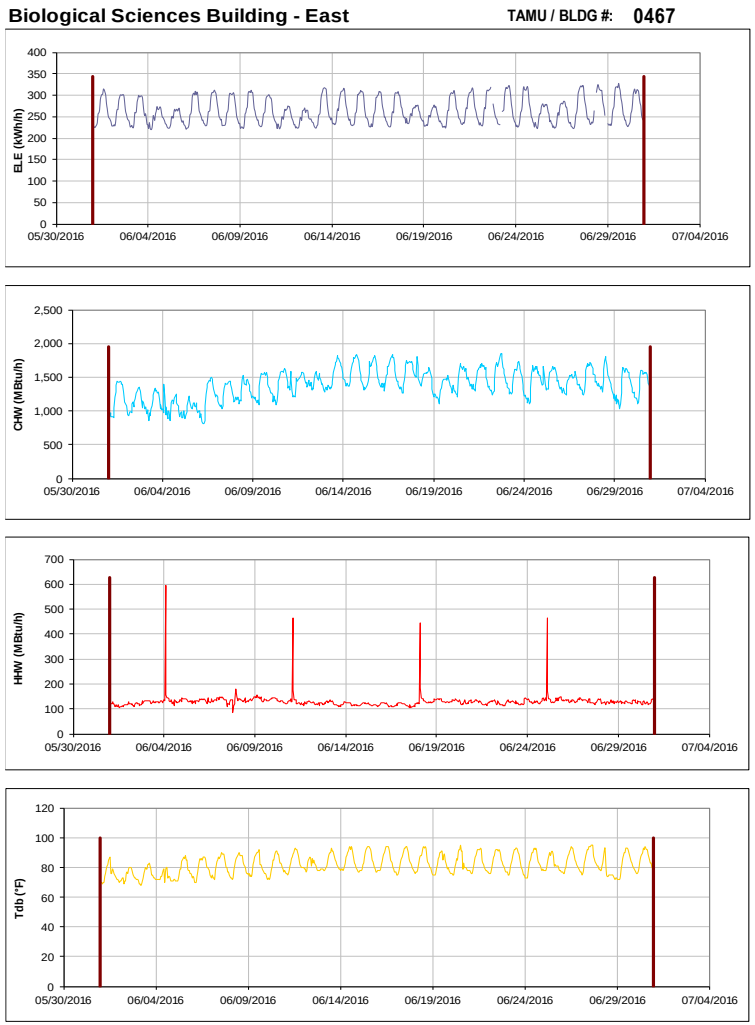


Figure III-78 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - East during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

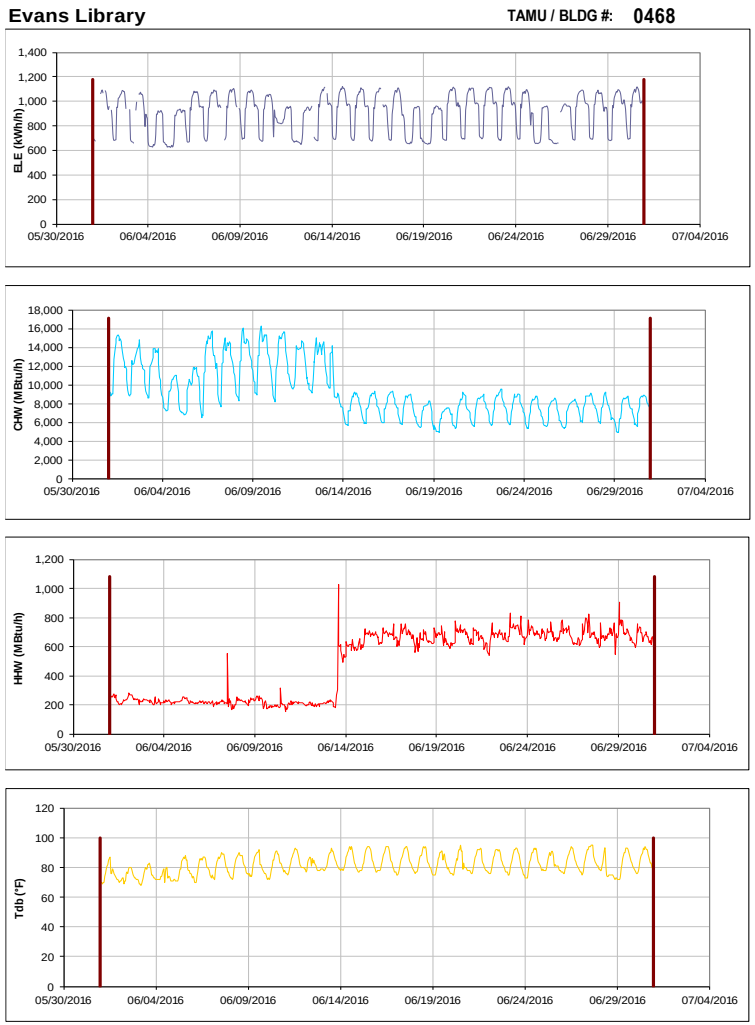


Figure III-79 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Evans Library during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

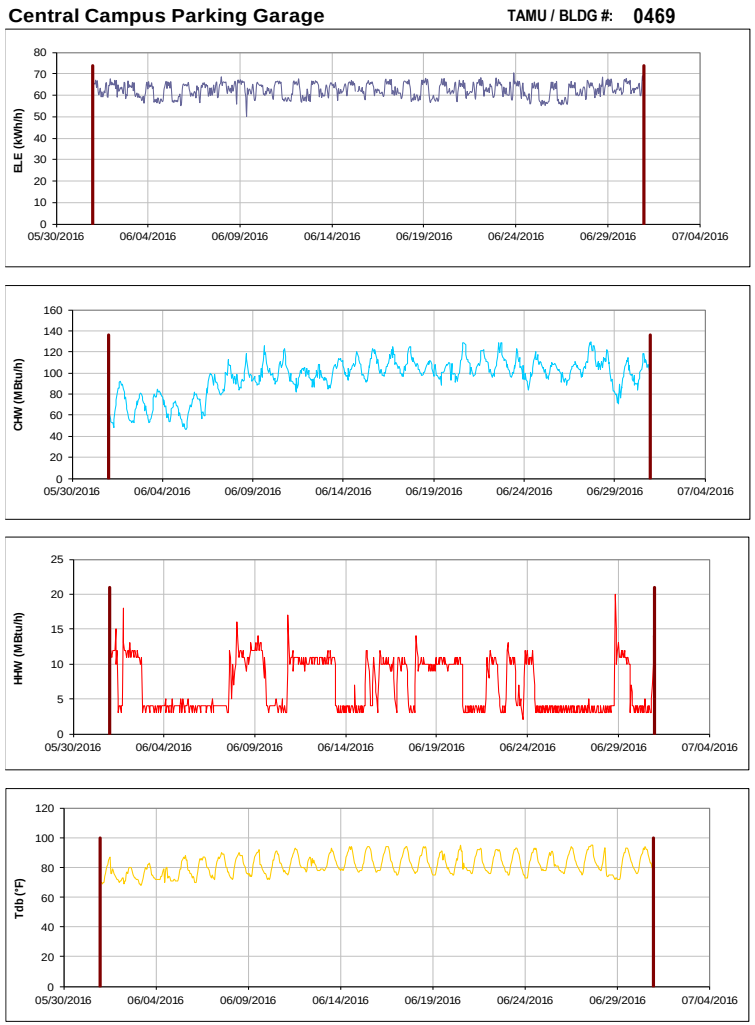


Figure III-80 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Central Campus Parking Garage during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Figure III-81 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Glasscock History Bldg during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

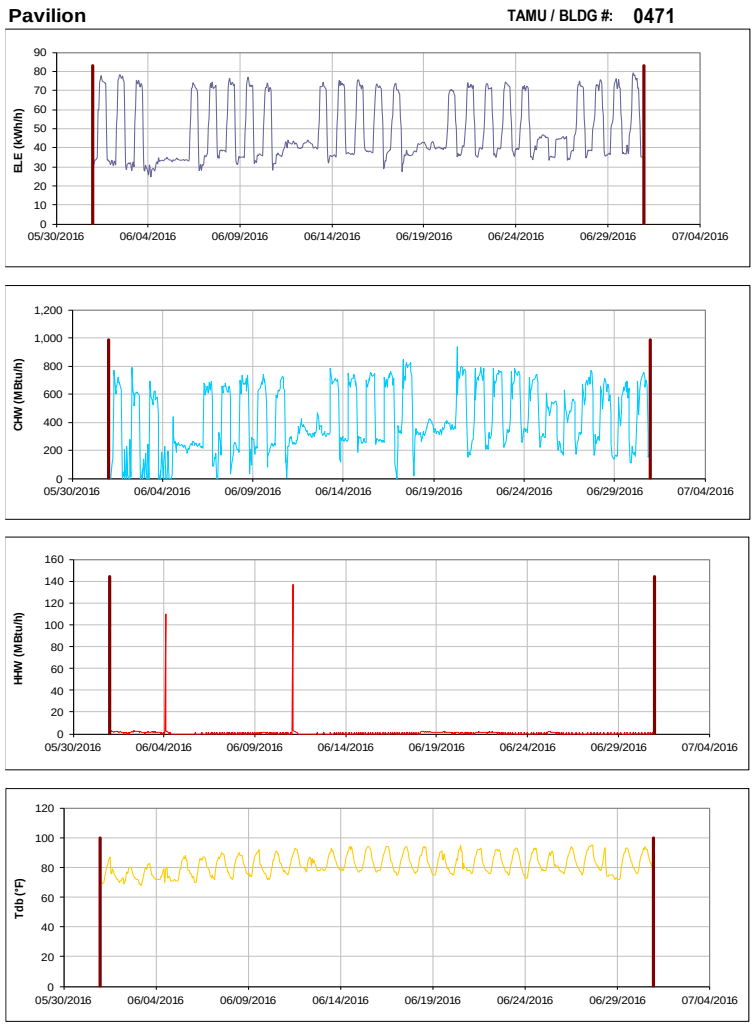


Figure III-82 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Pavilion during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

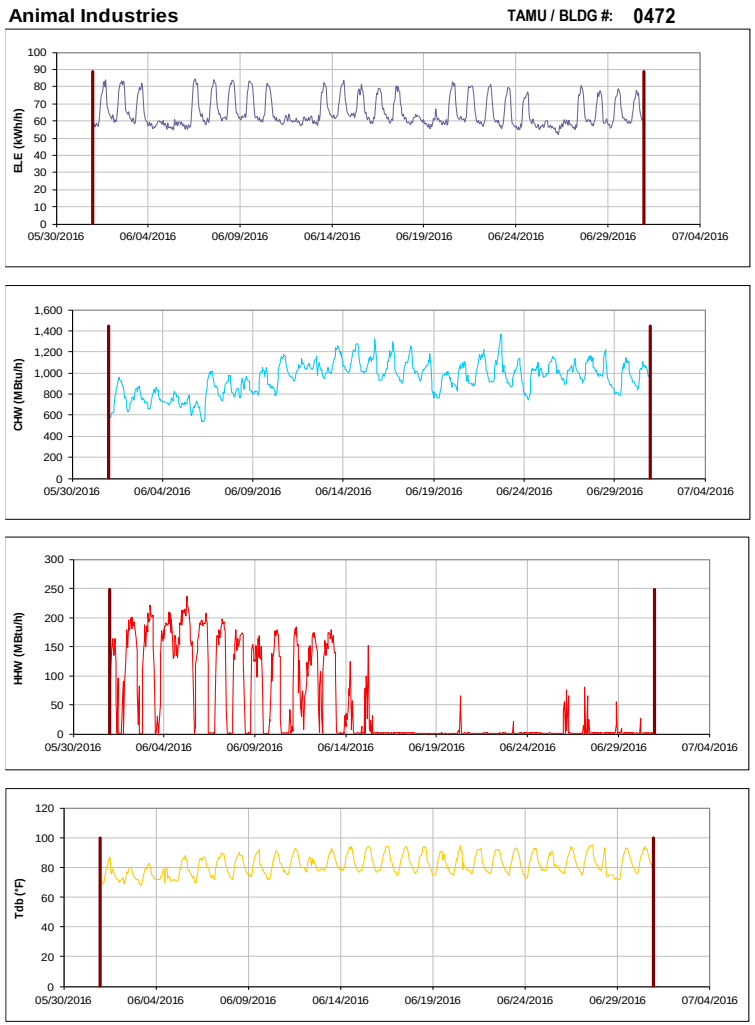


Figure III-83 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Animal Industries during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

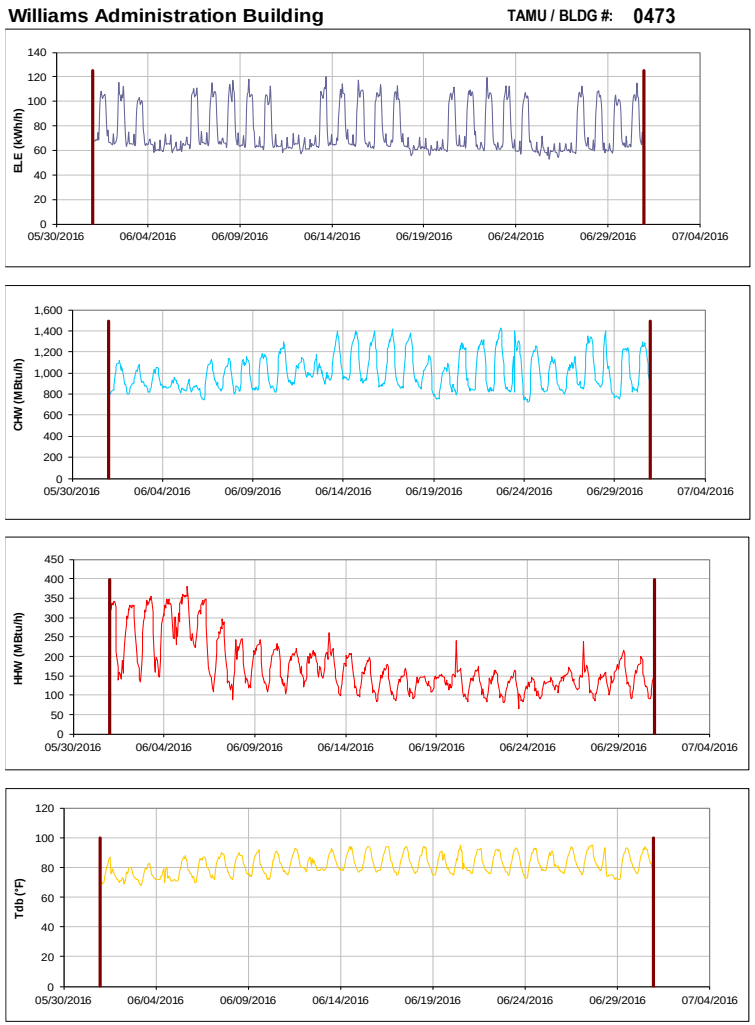


Figure III-84 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Williams Administration Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

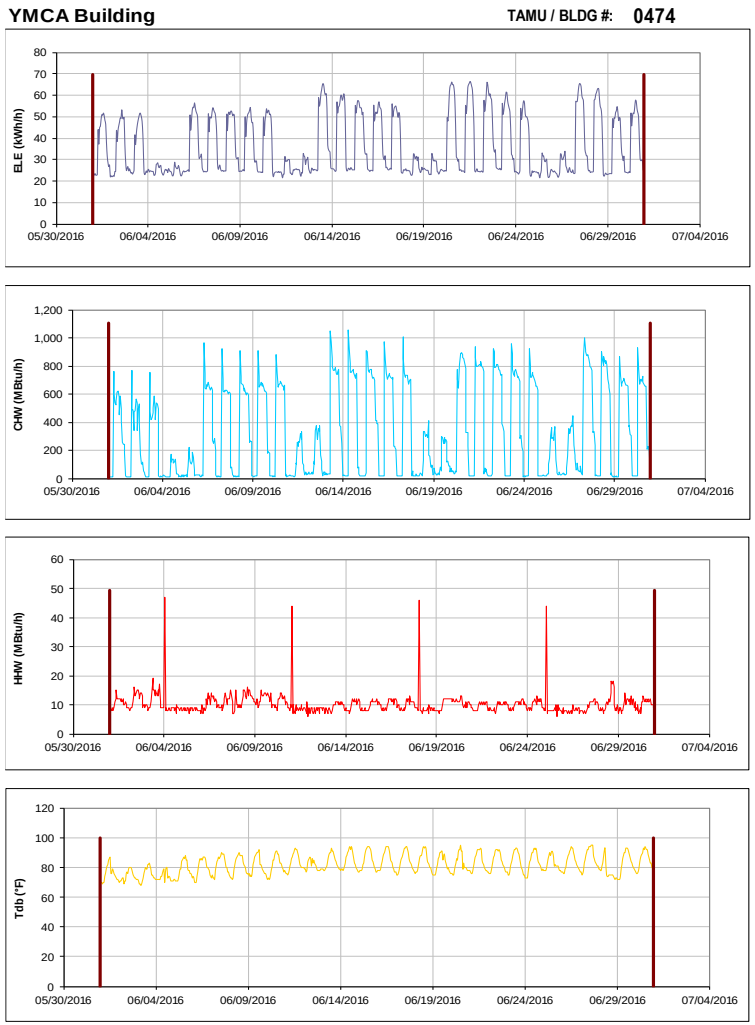


Figure III-85 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for YMCA Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

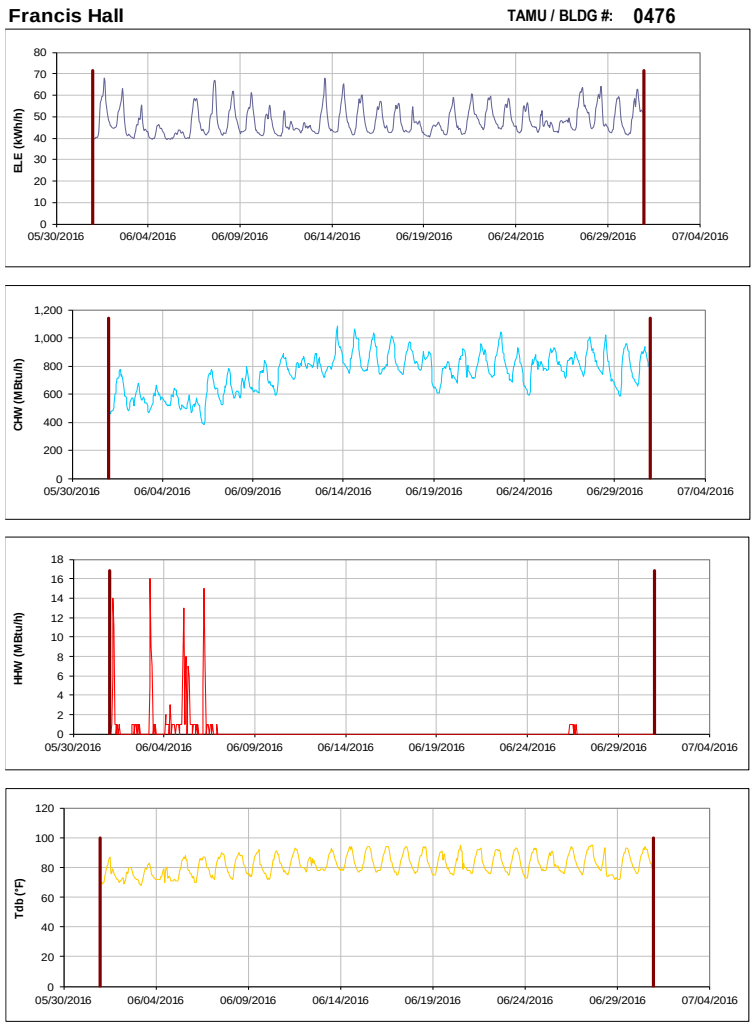


Figure III-86 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Francis Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

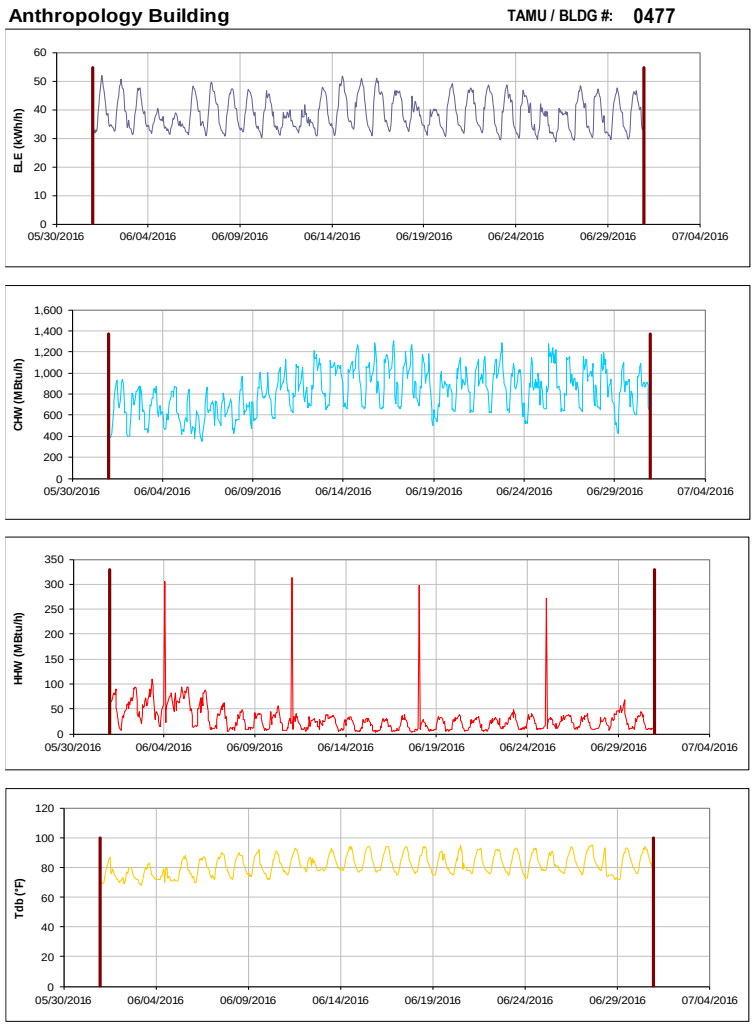


Figure III-87 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Anthropology Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

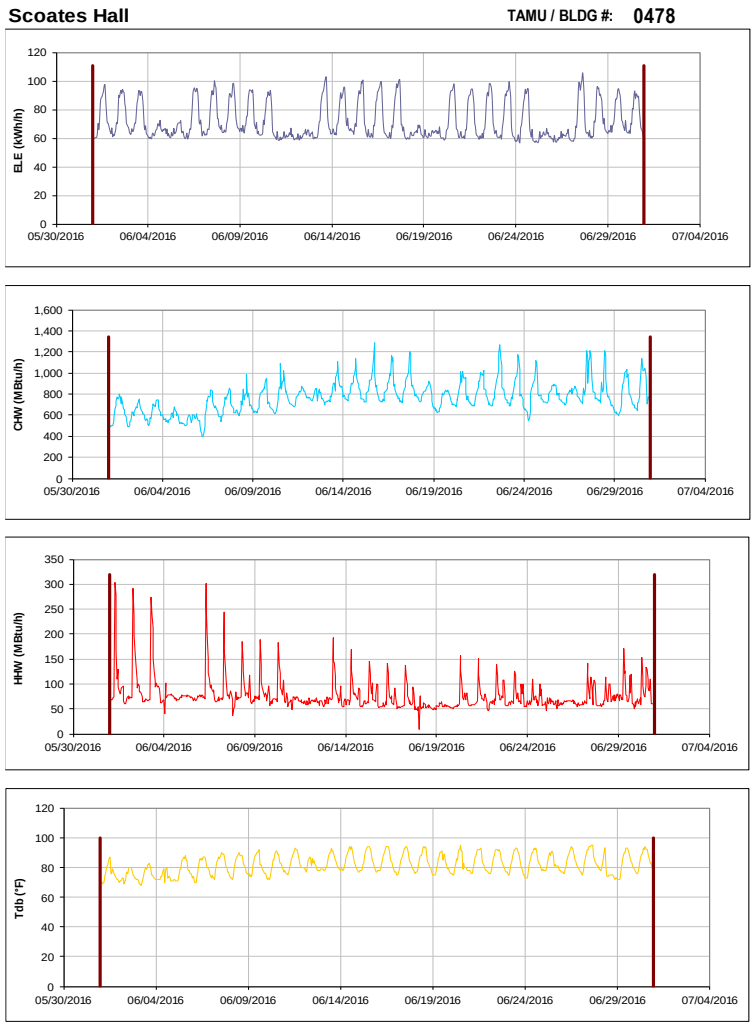


Figure III-88 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Scoates Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

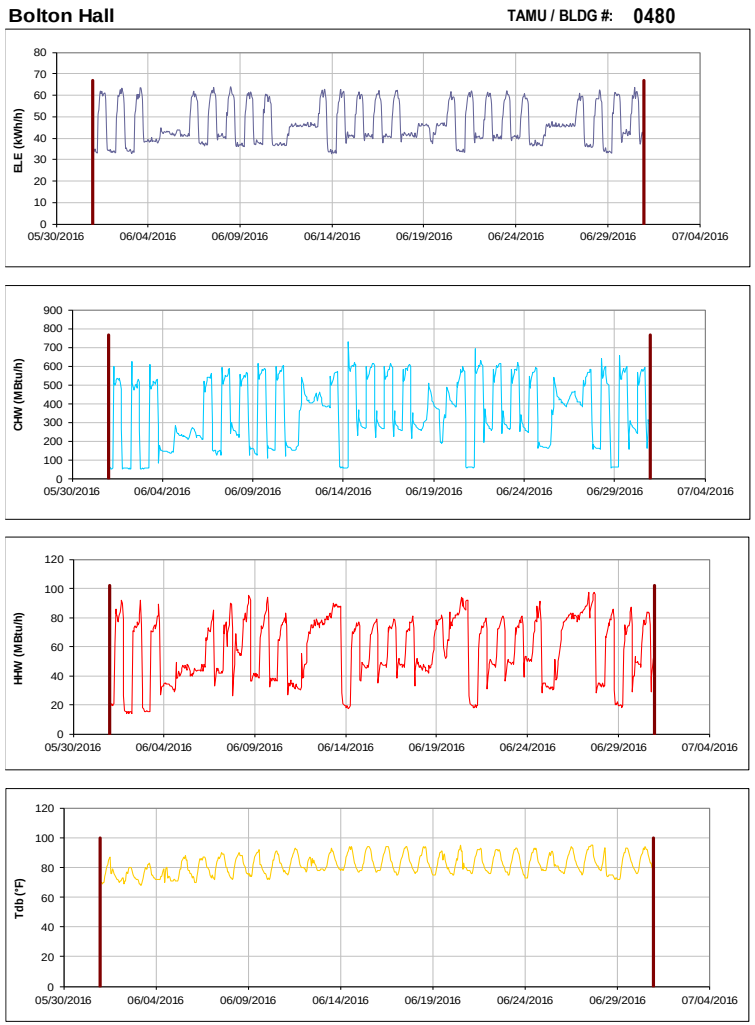


Figure III-89 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bolton Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

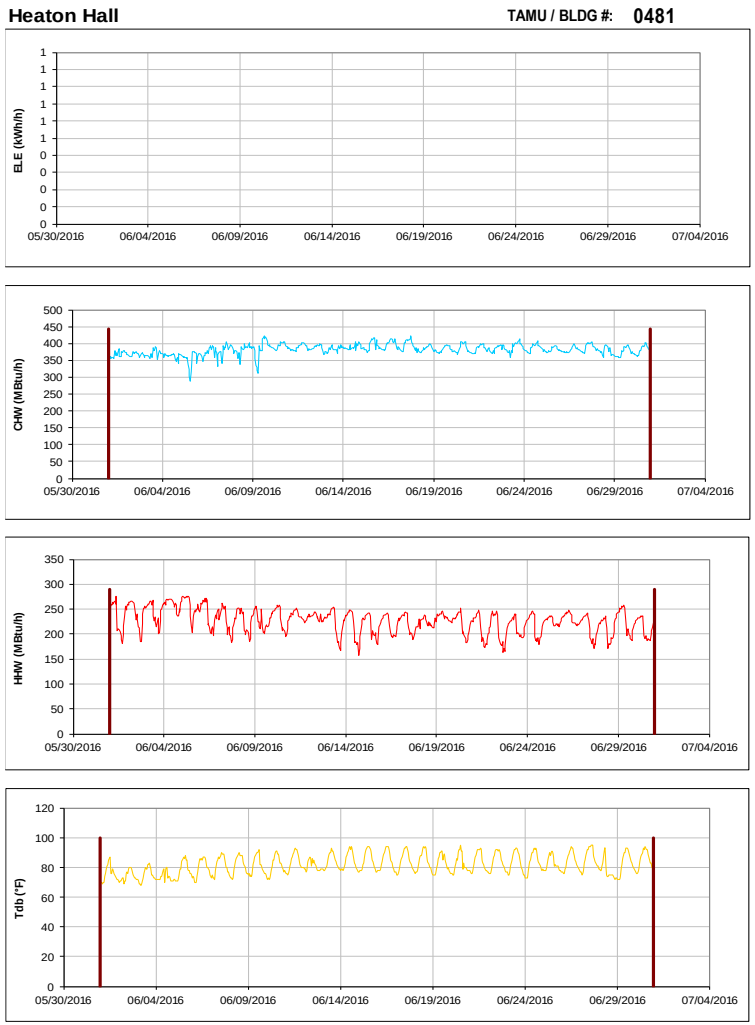


Figure III-90 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heaton Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

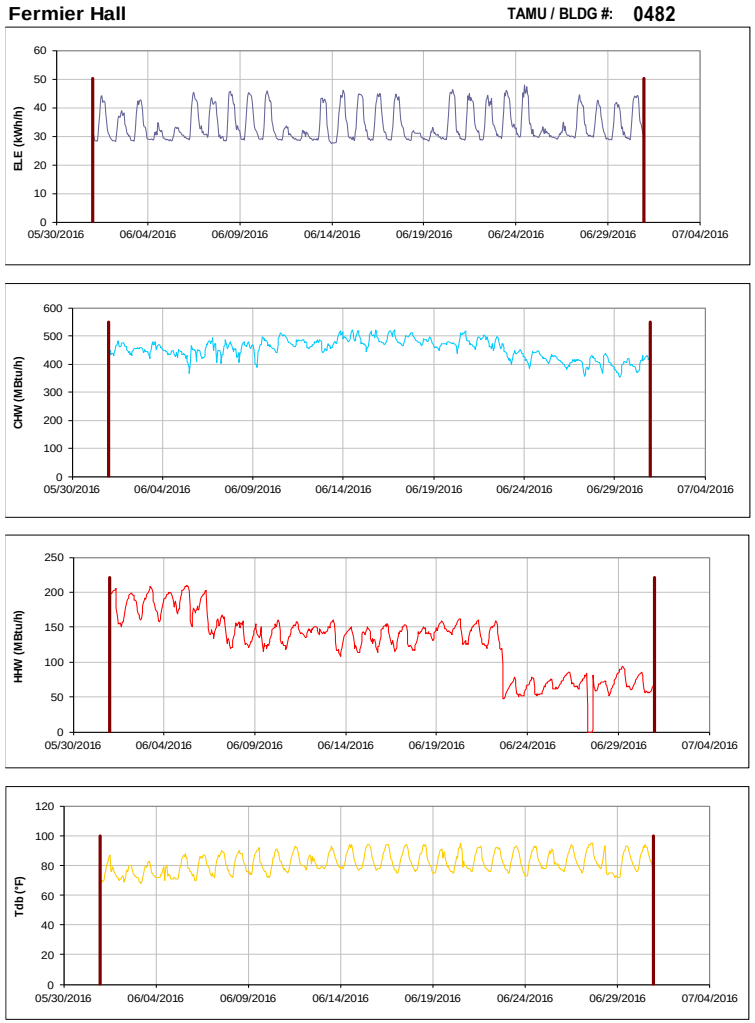


Figure III-91 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fermier Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

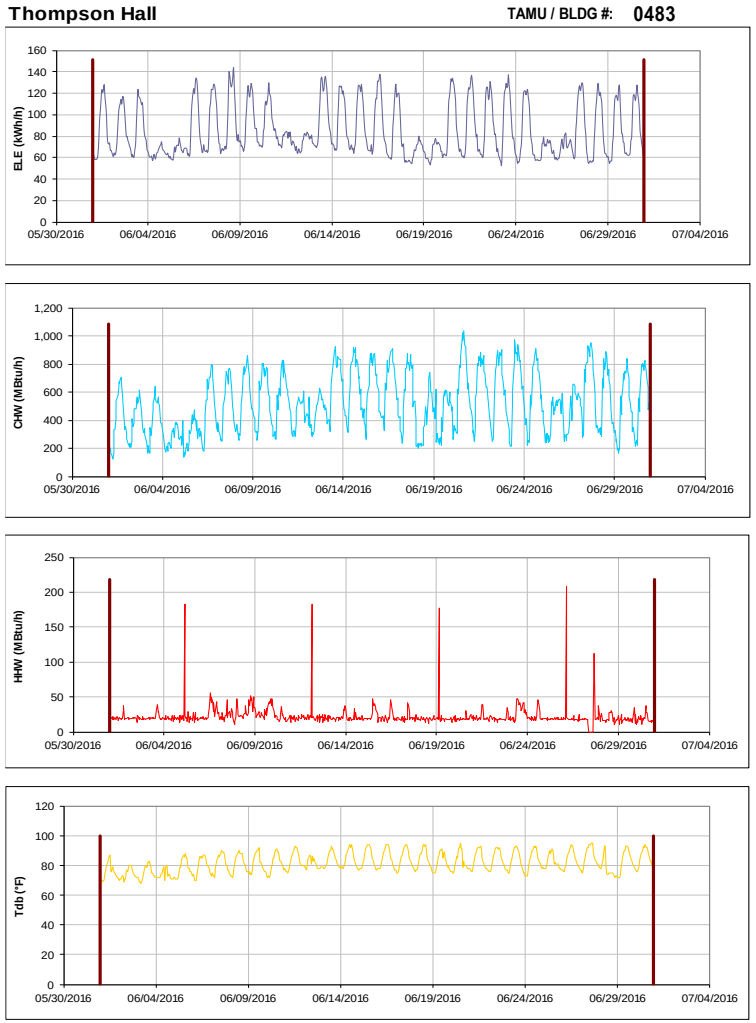


Figure III-92 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Thompson Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

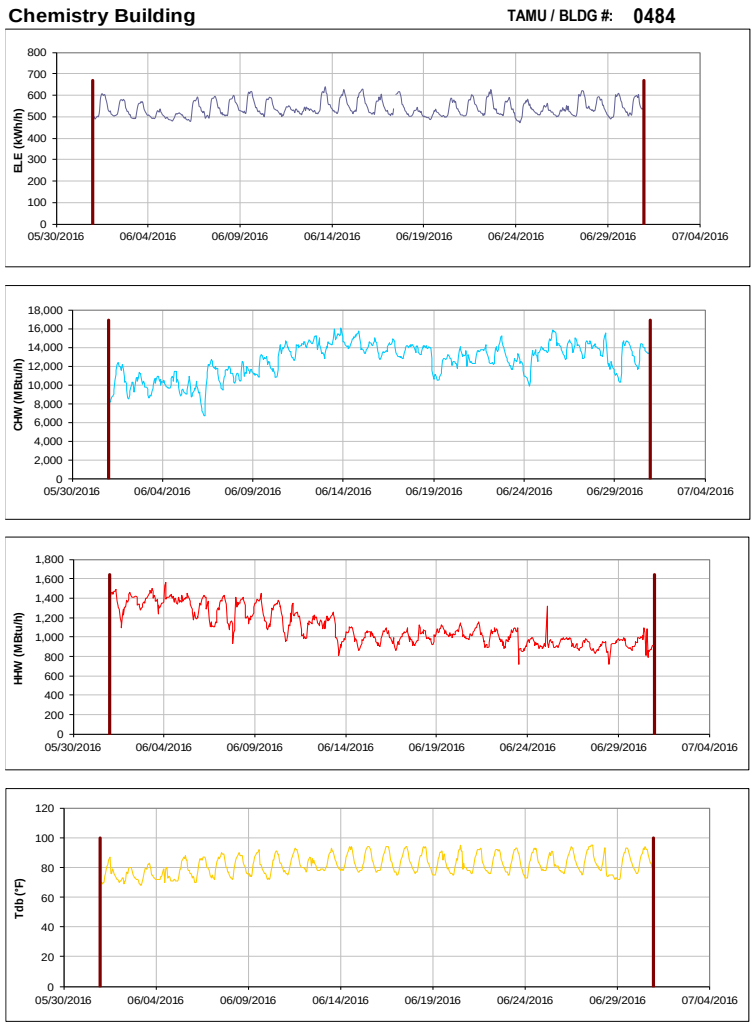


Figure III-93 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

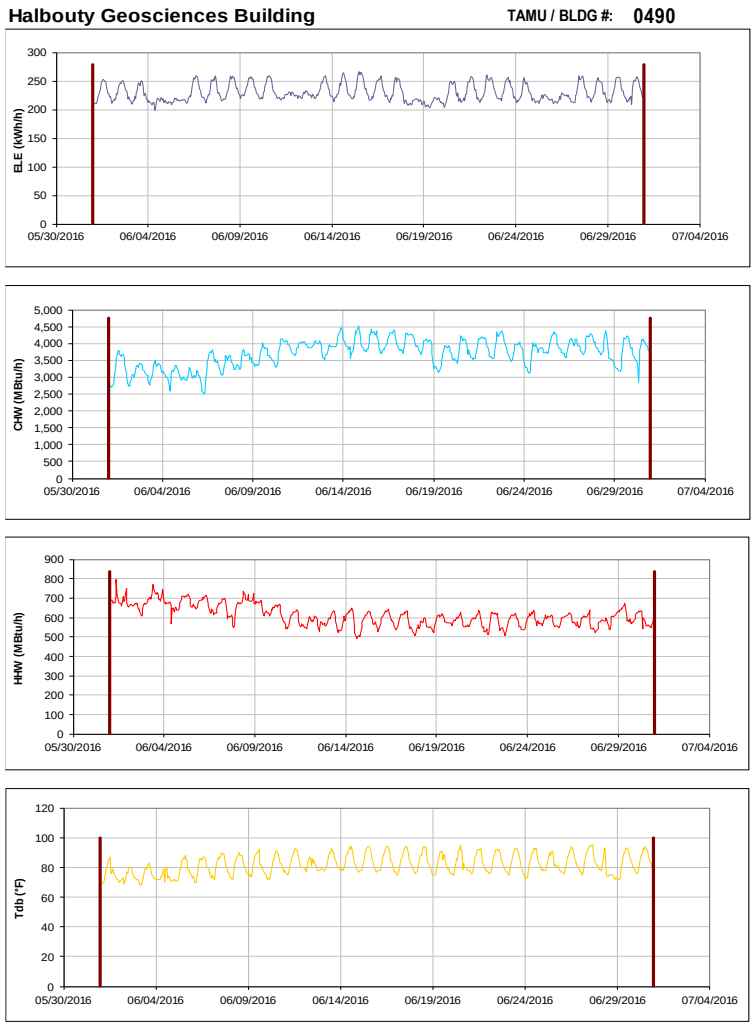


Figure III-94 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Halbouty Geosciences Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

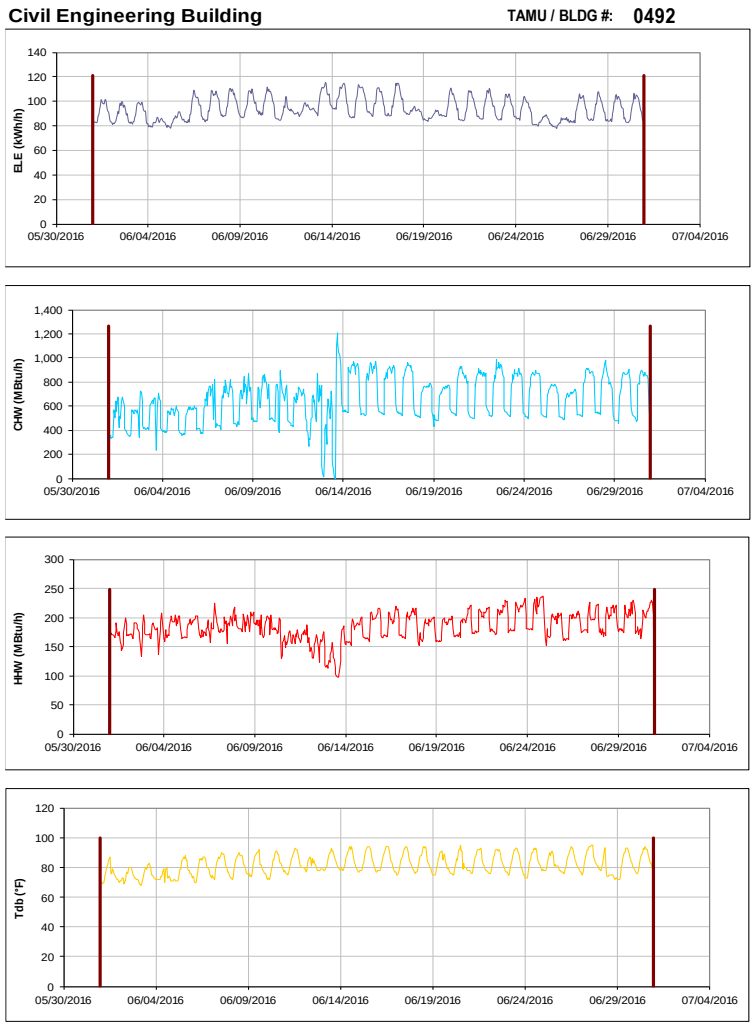


Figure III-95 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Civil Engineering Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

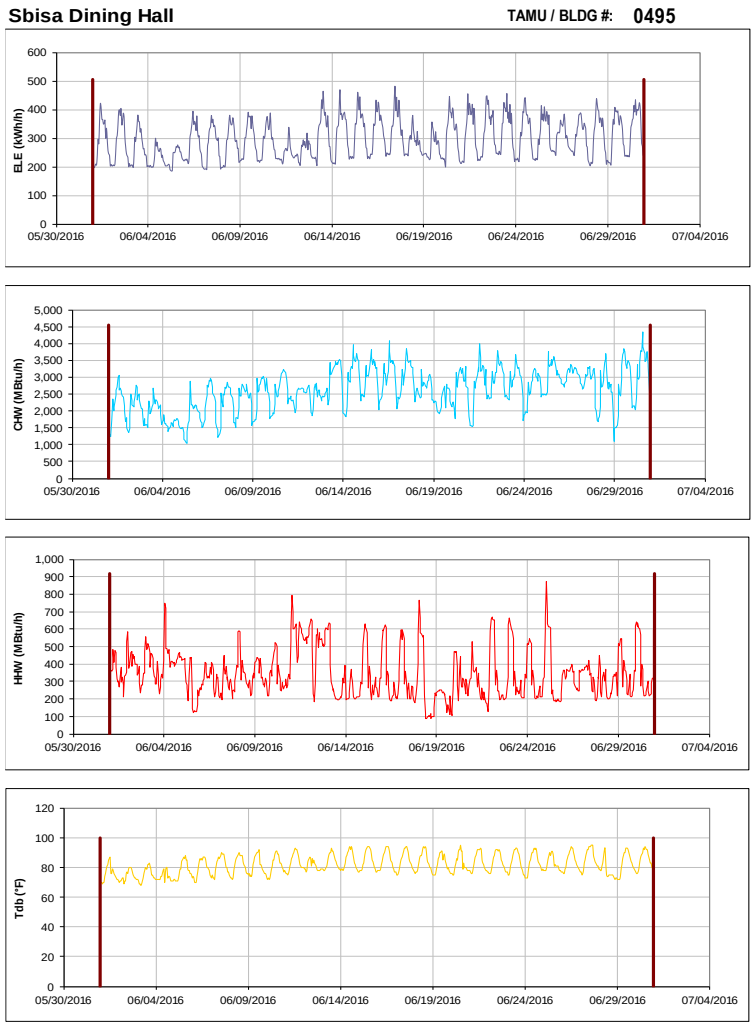


Figure III-96 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sbisa Dining Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

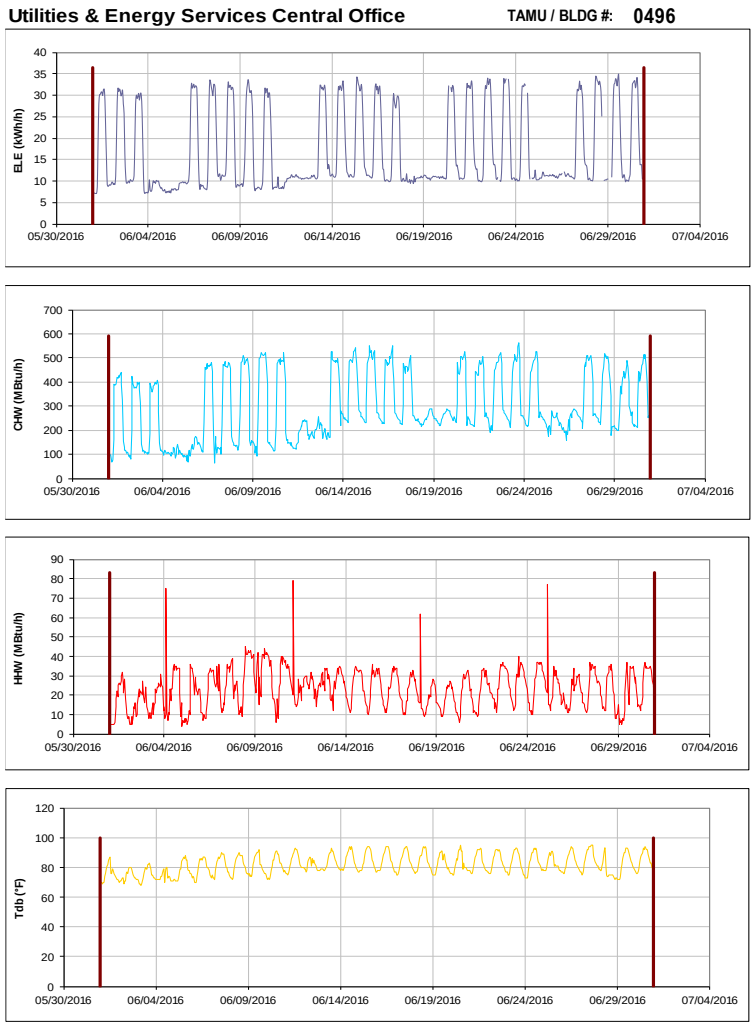


Figure III-97 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Central Office during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

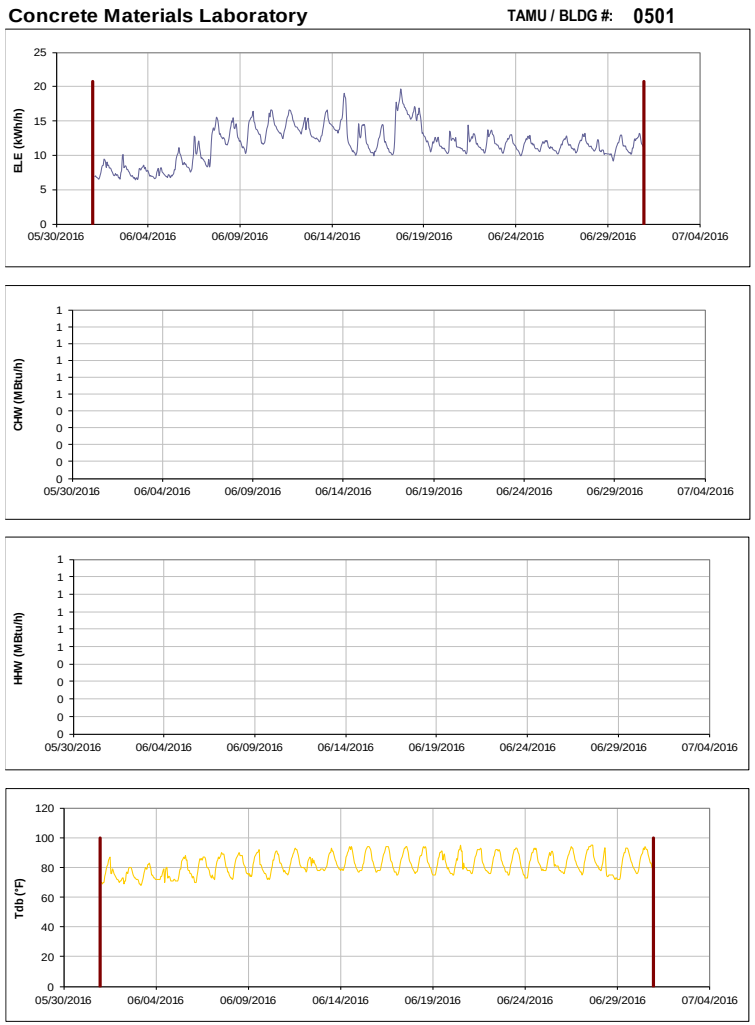


Figure III-98 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Concrete Materials Laboratory during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

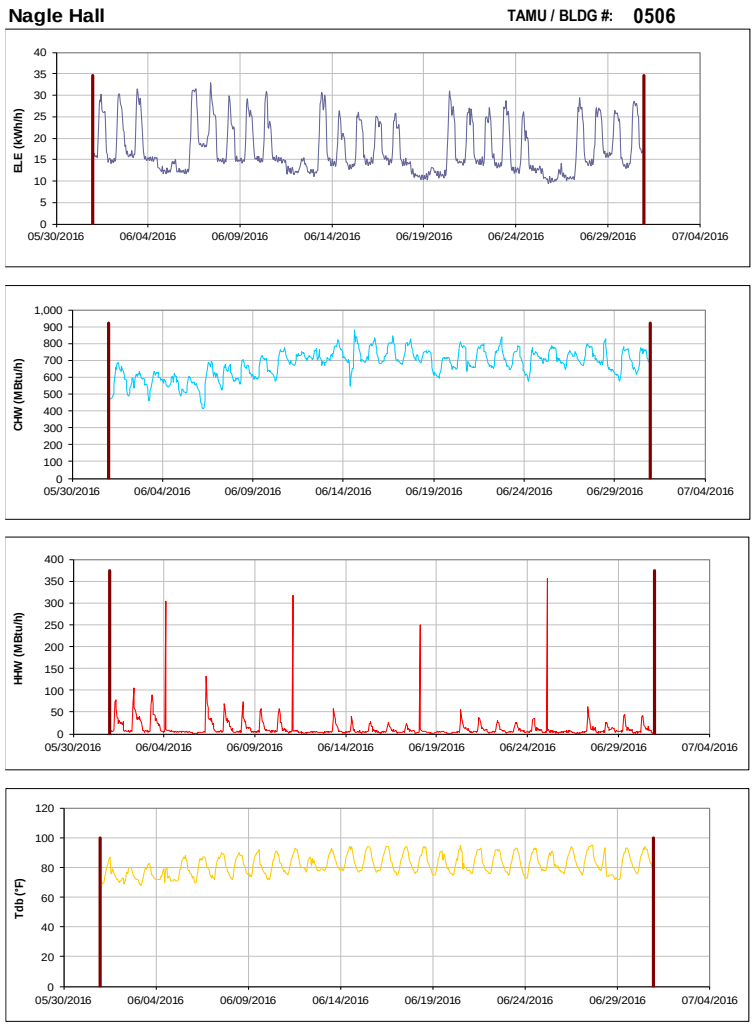


Figure III-99 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nagle Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

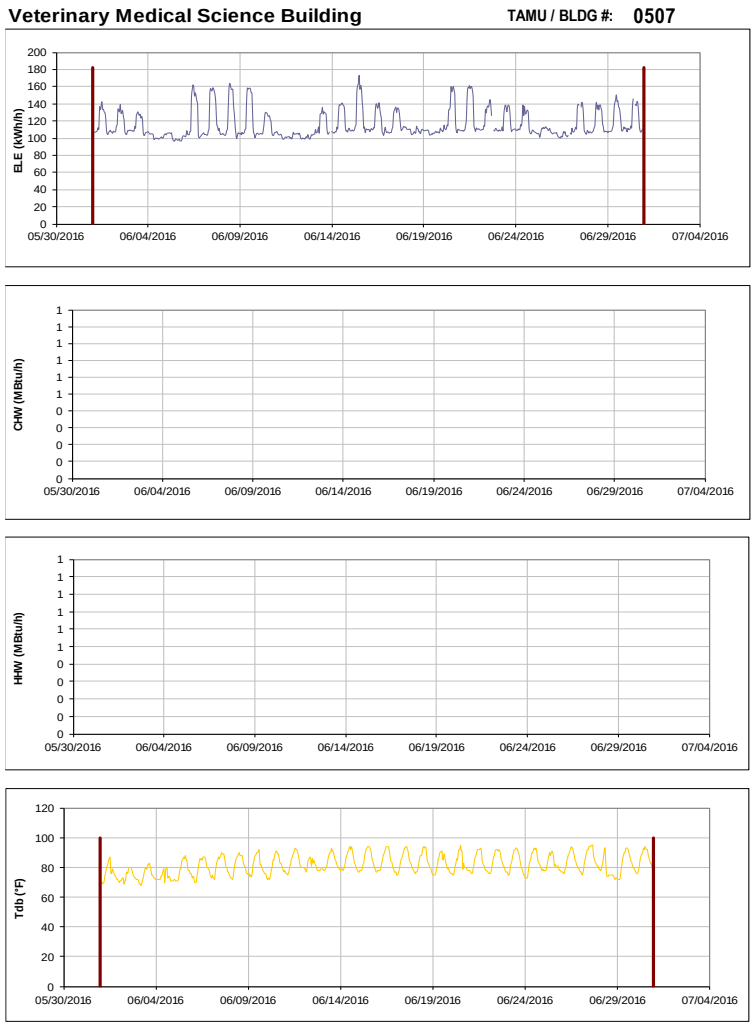


Figure III-100 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medical Science Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

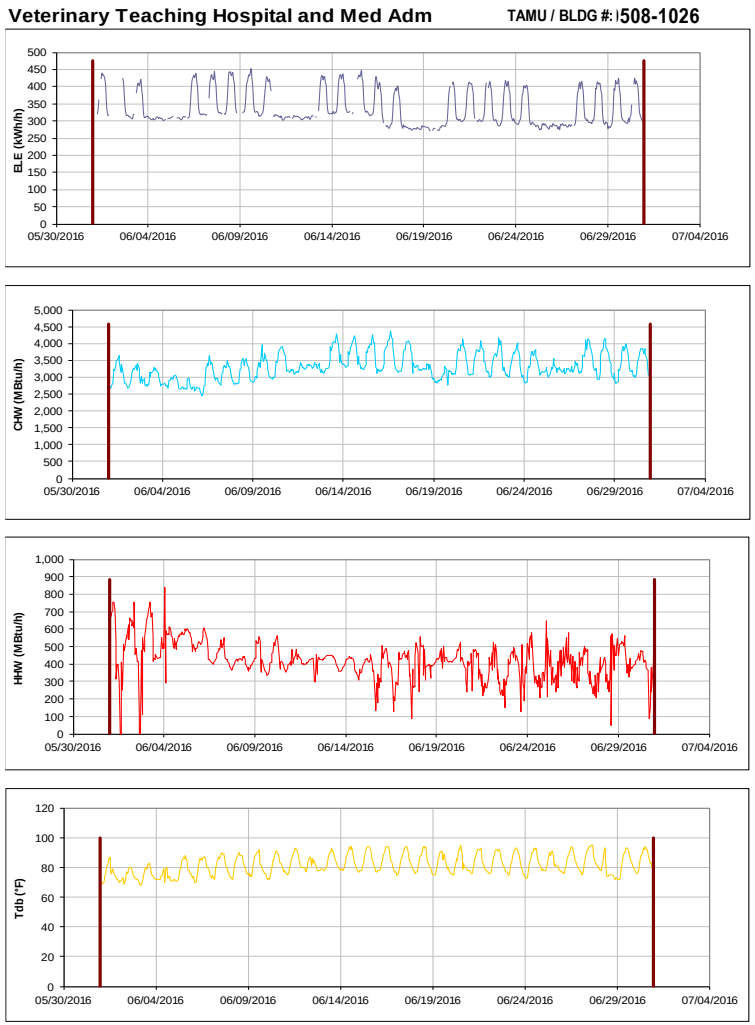


Figure III-101 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Teaching Hospital and Med Adm during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

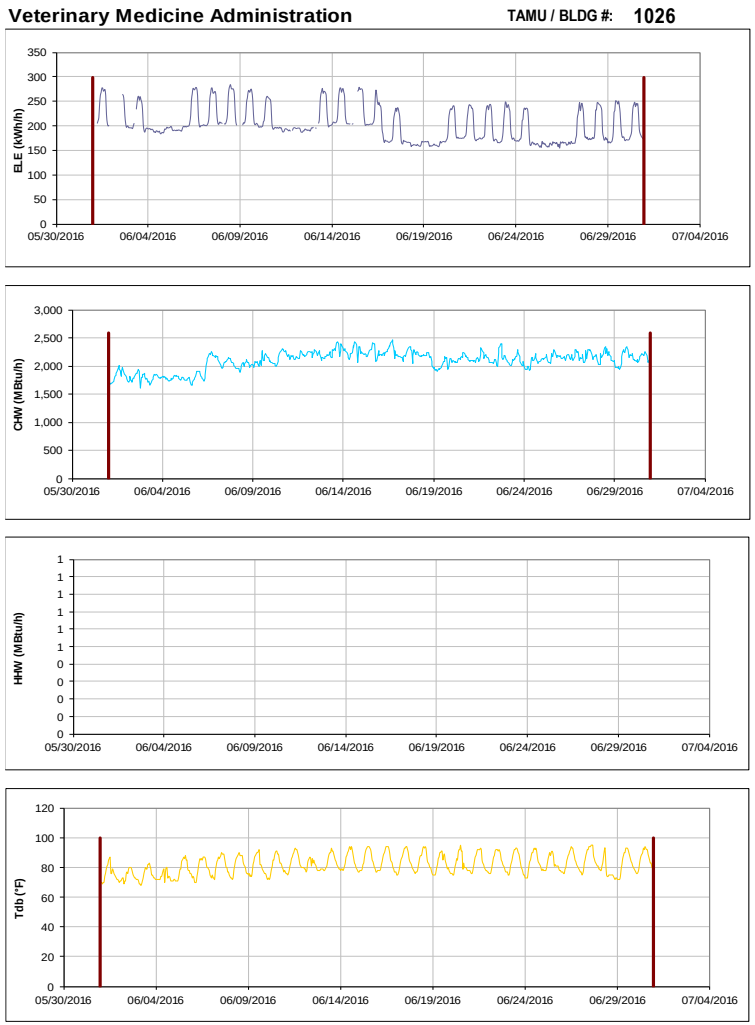


Figure III-102 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Administration during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

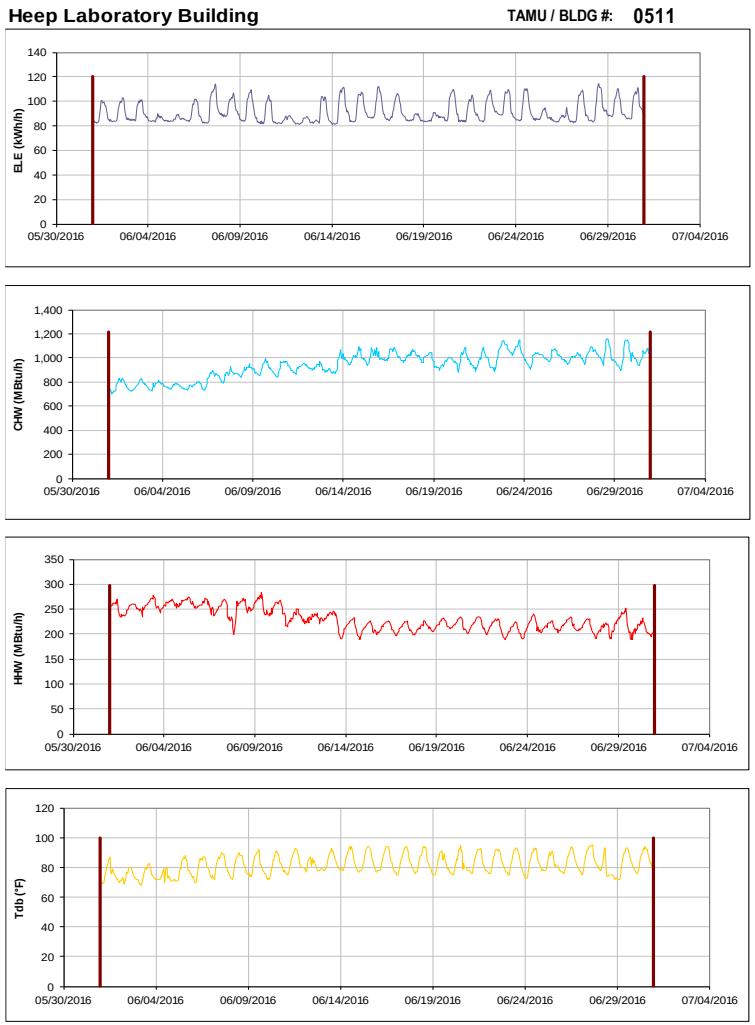


Figure III-103 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Laboratory Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

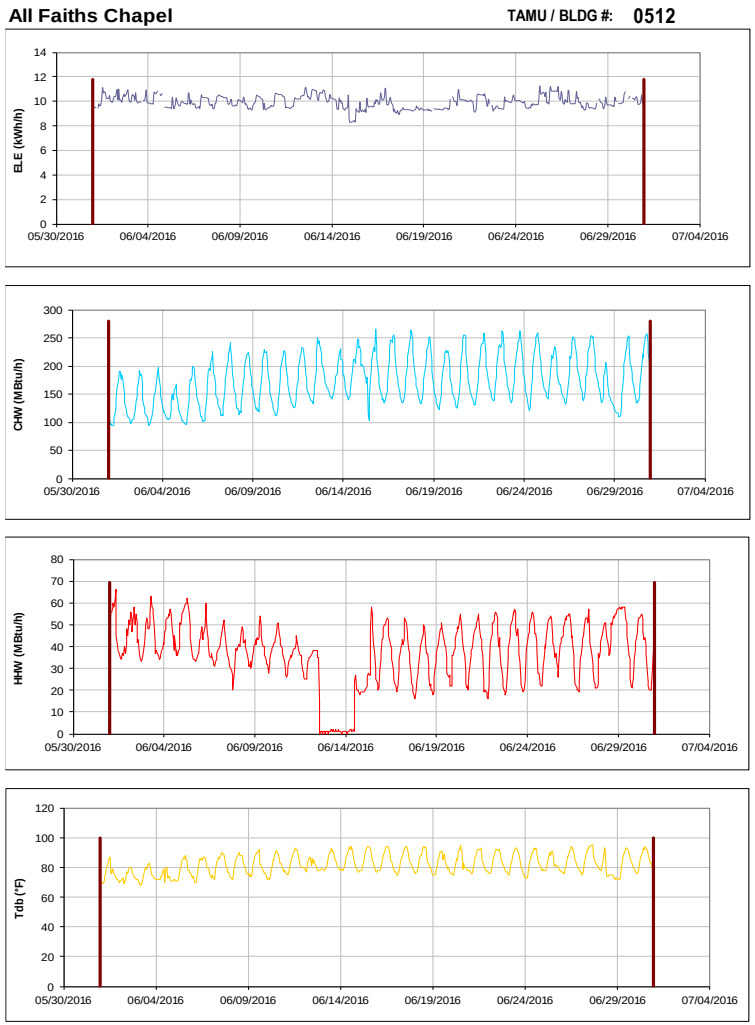


Figure III-104 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for All Faiths Chapel during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

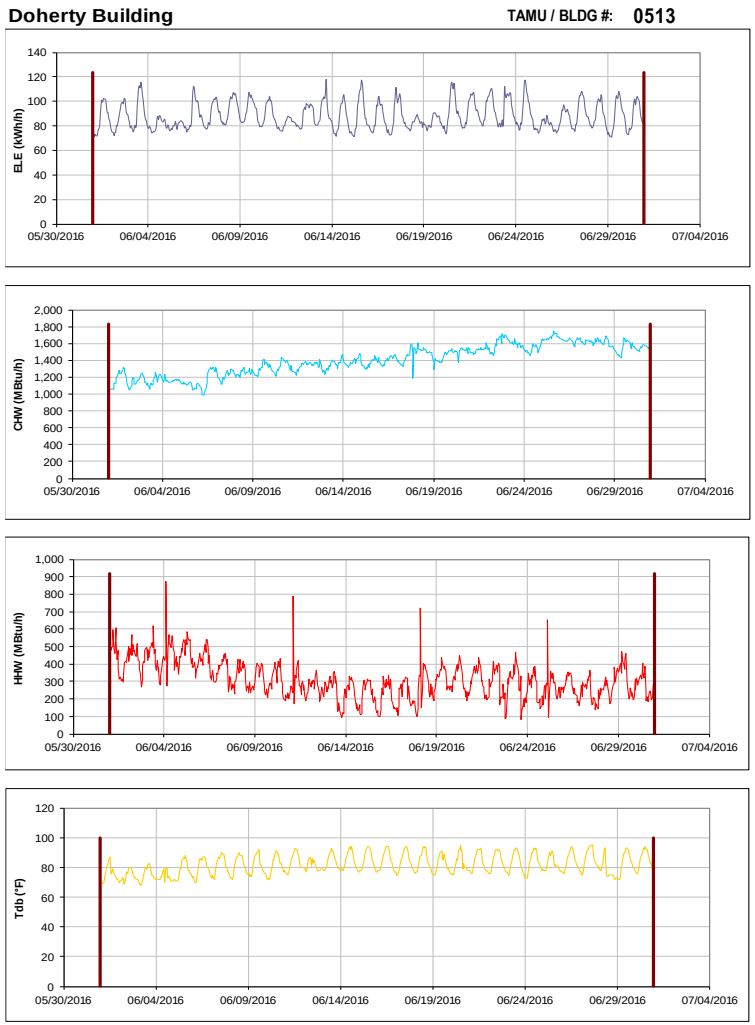


Figure III-105 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Doherty Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

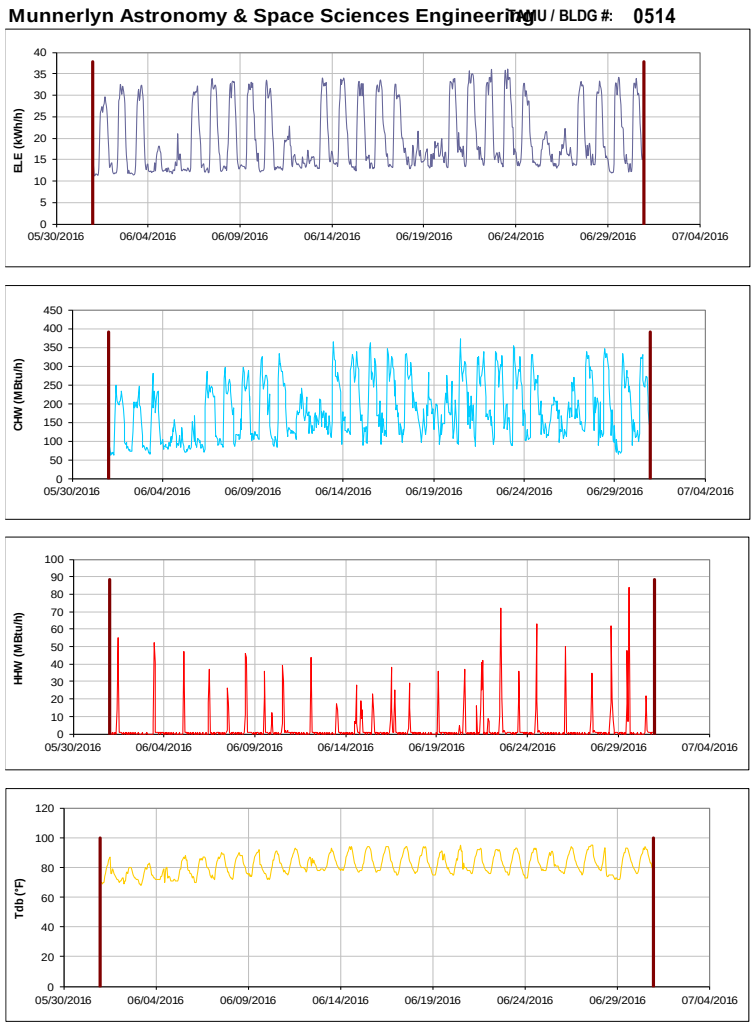


Figure III-106 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Munnerlyn Astronomy & Space Sciences Engineering during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

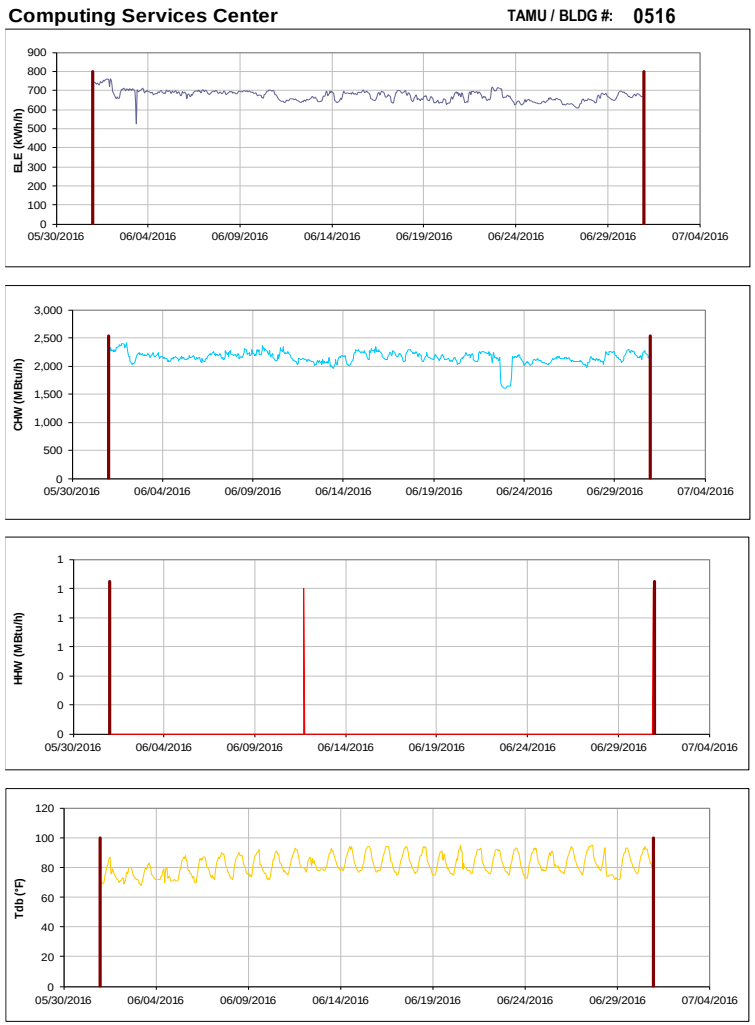


Figure III-107 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Computing Services Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

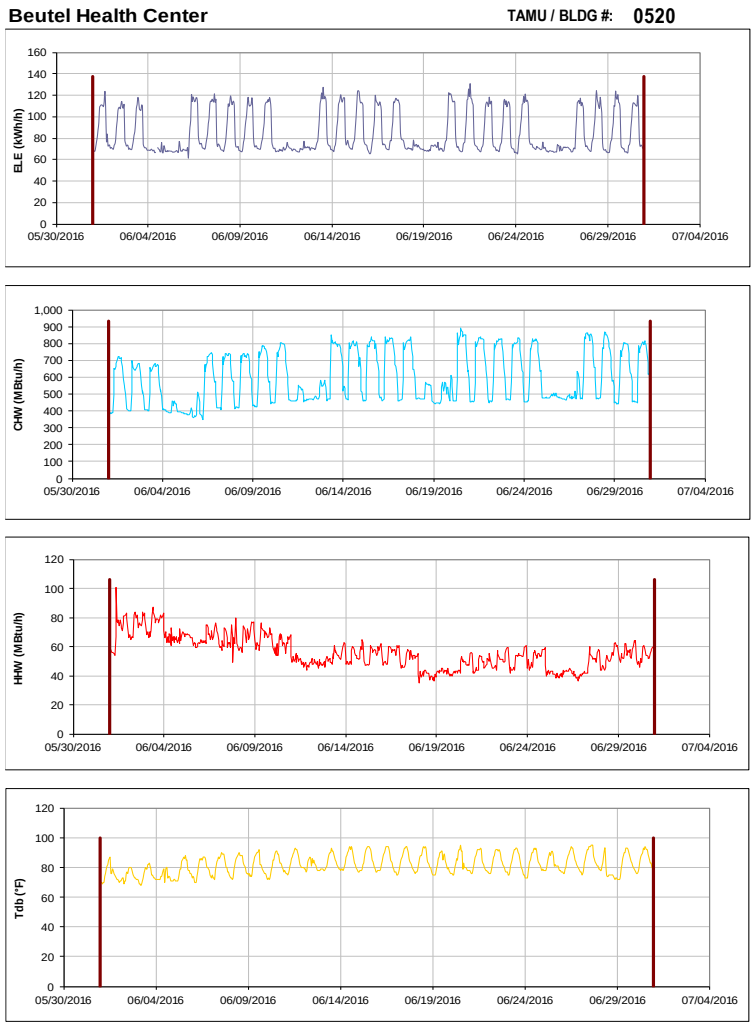


Figure III-108 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Beutel Health Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

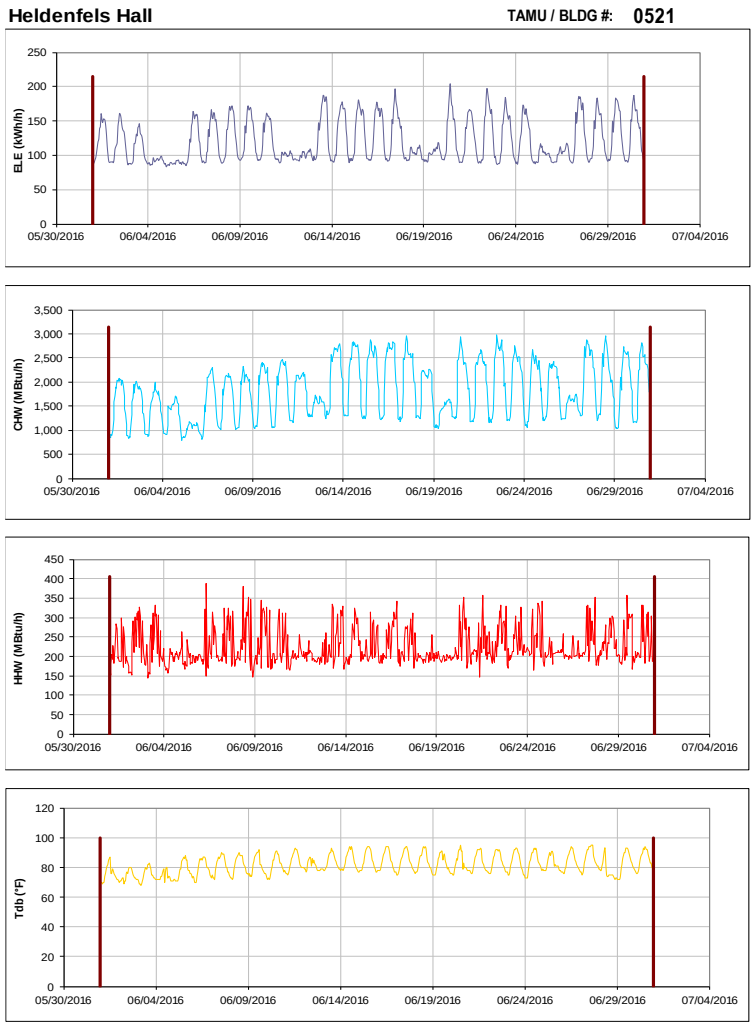


Figure III-109 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heldenfels Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

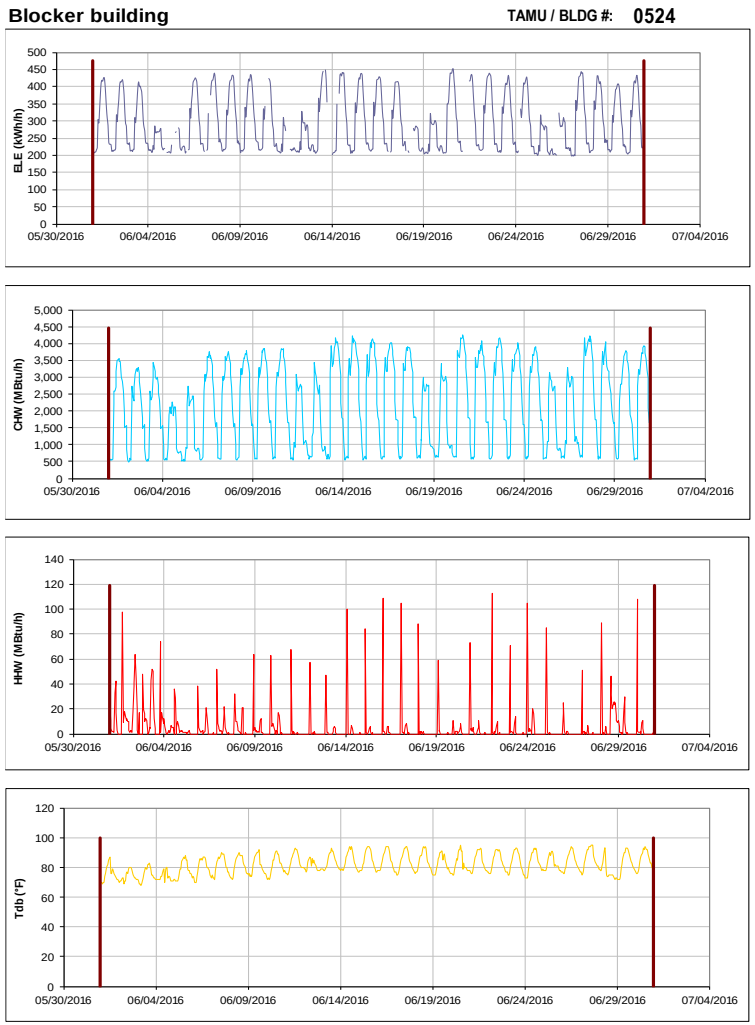


Figure III-110 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Blocker building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

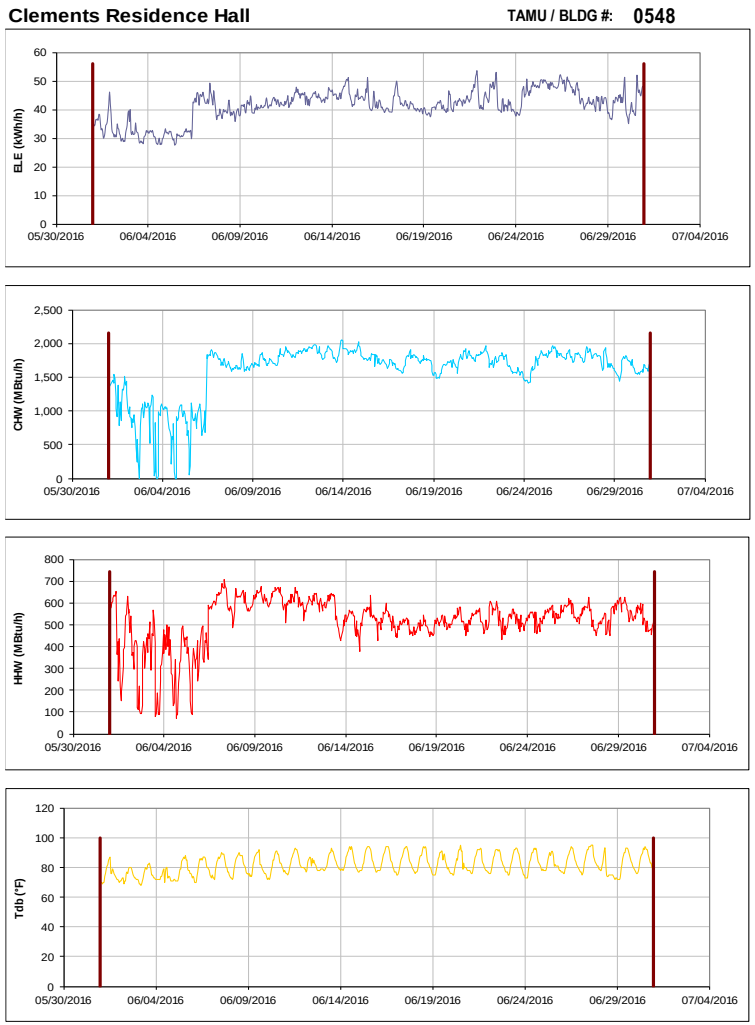


Figure III-111 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Clements Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

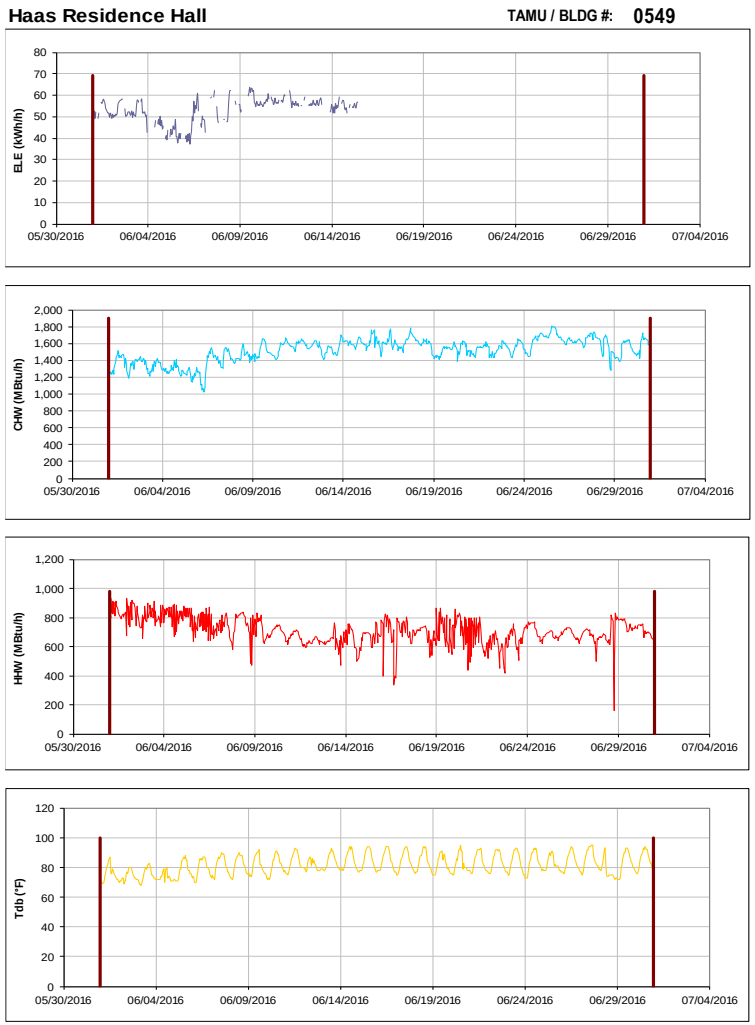


Figure III-112 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Haas Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

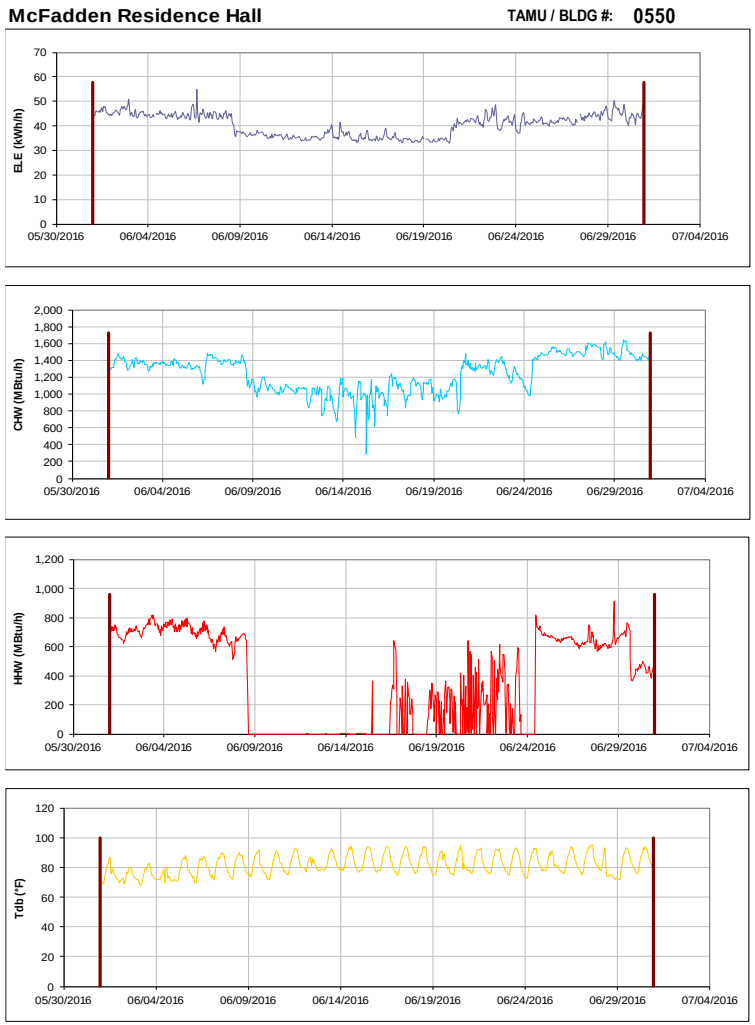


Figure III-113 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McFadden Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

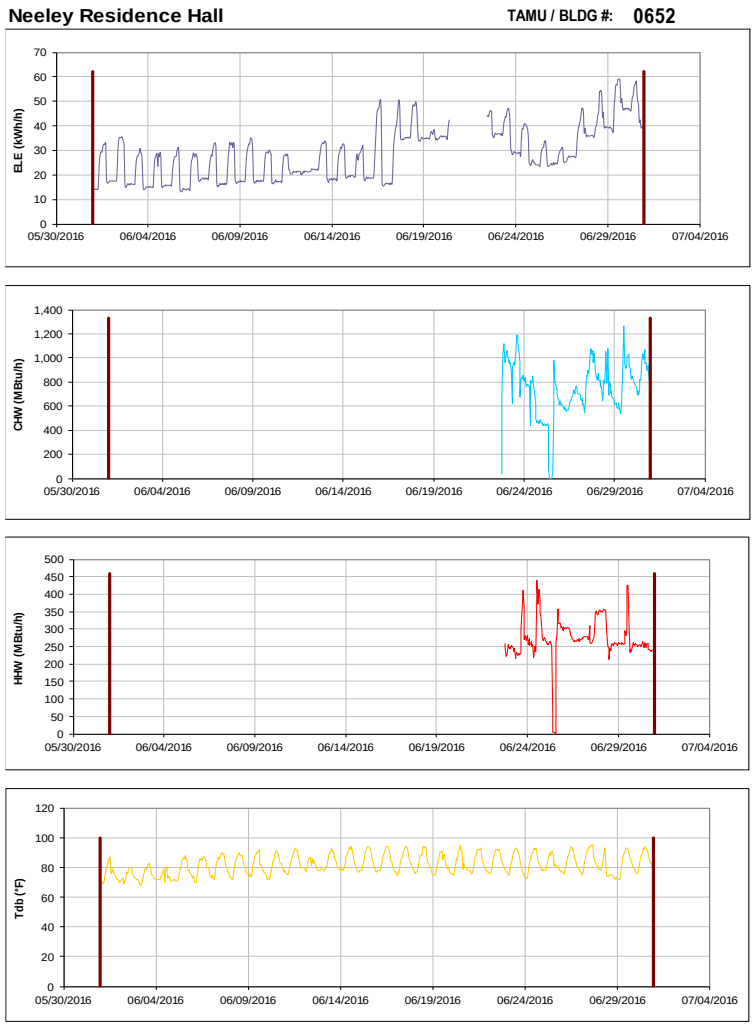


Figure III-114 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Neeley Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

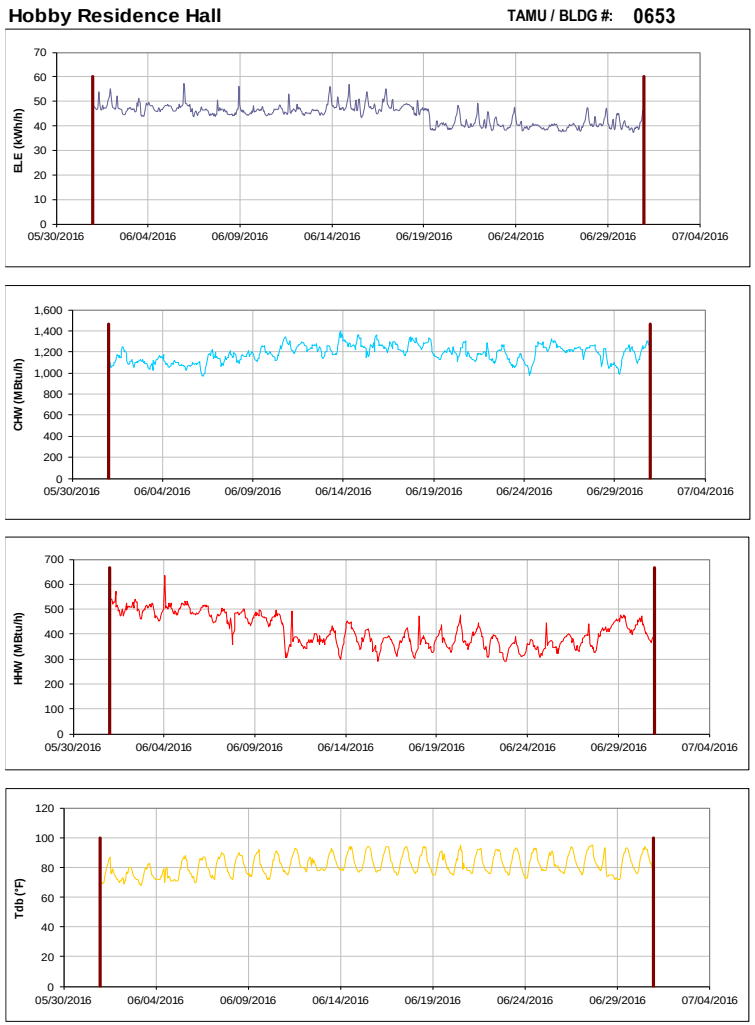


Figure III-115 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hobby Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

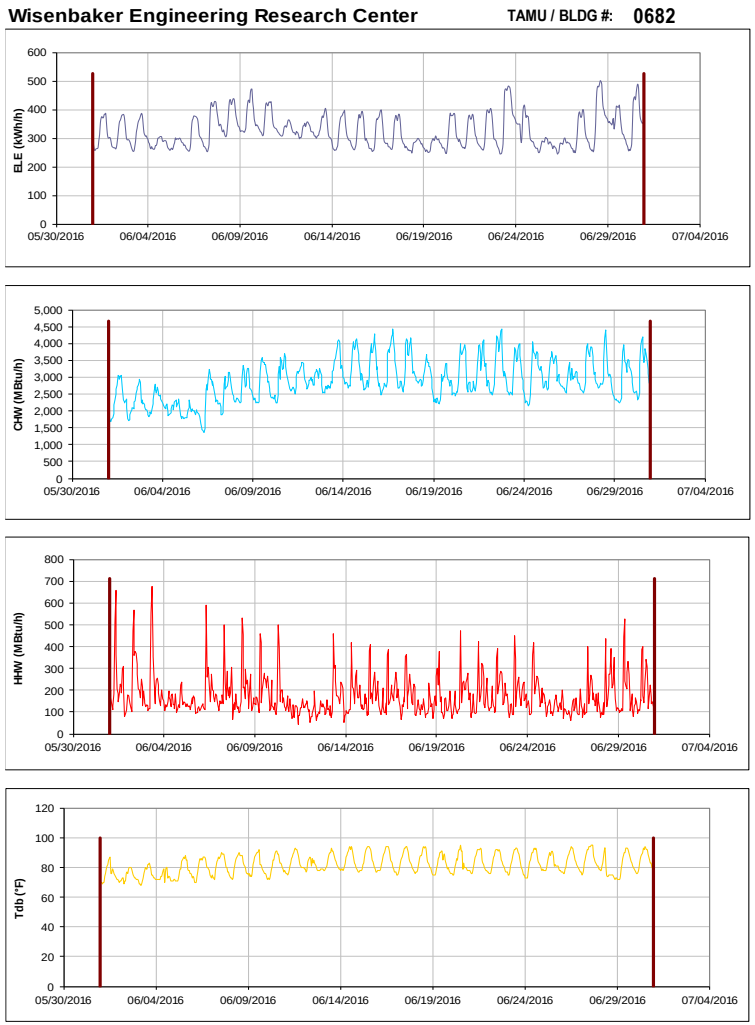


Figure III-116 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wisenbaker Engineering Research Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

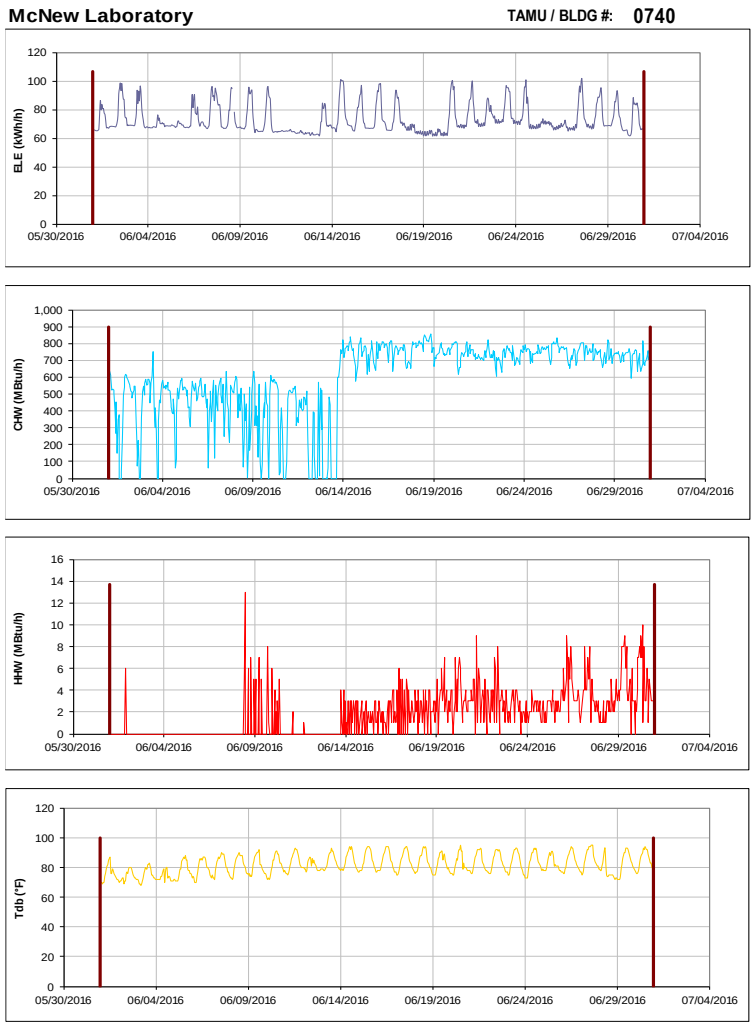


Figure III-117 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McNew Laboratory during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

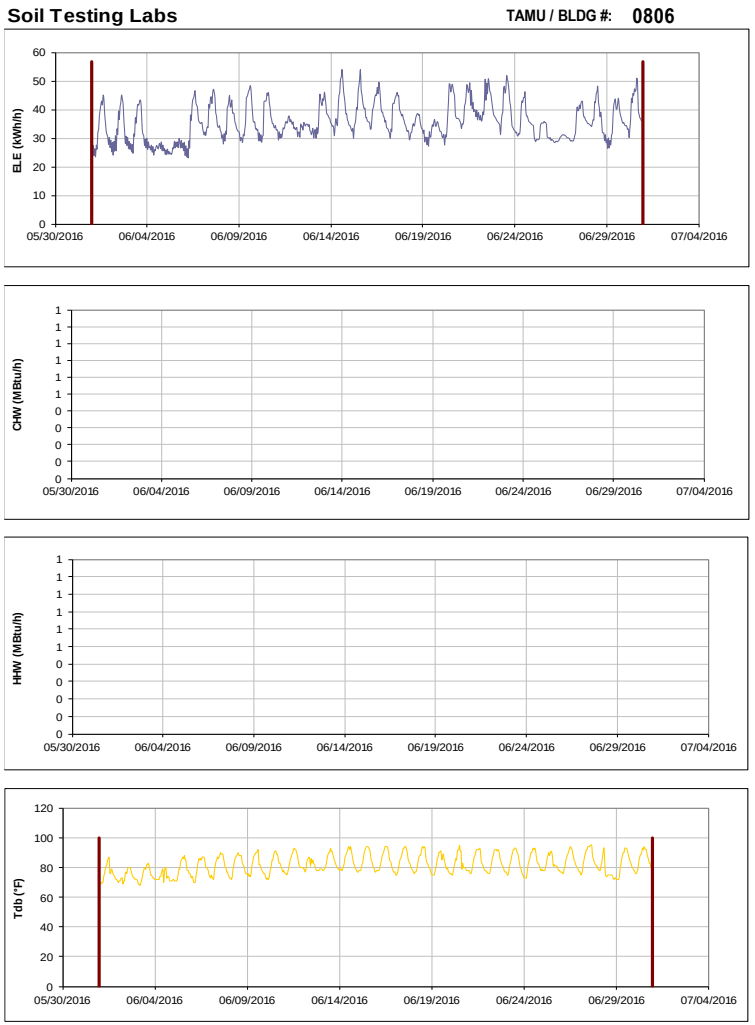


Figure III-118 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Soil Testing Labs during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

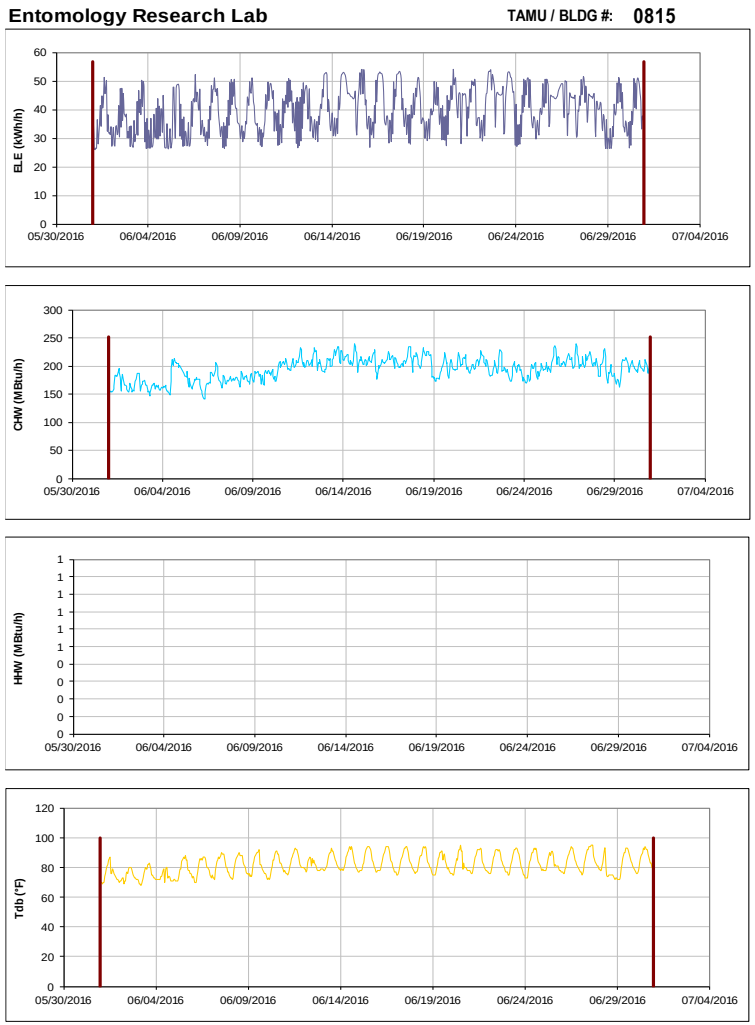


Figure III-119 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Entomology Research Lab during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

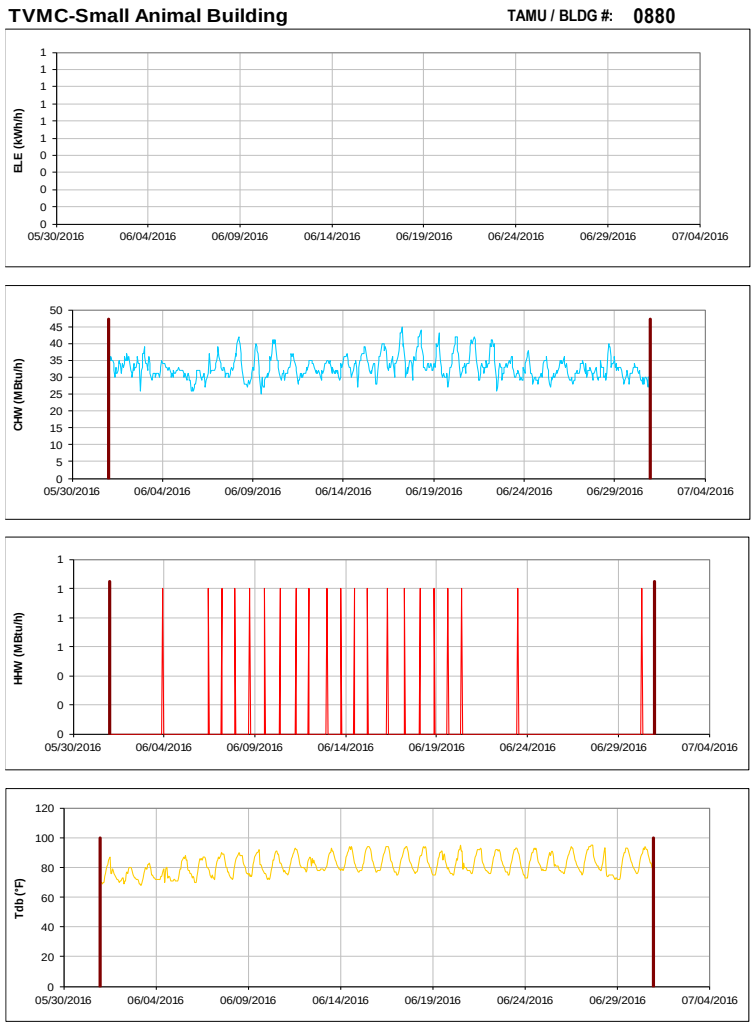


Figure III-120 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TVMC-Small Animal Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

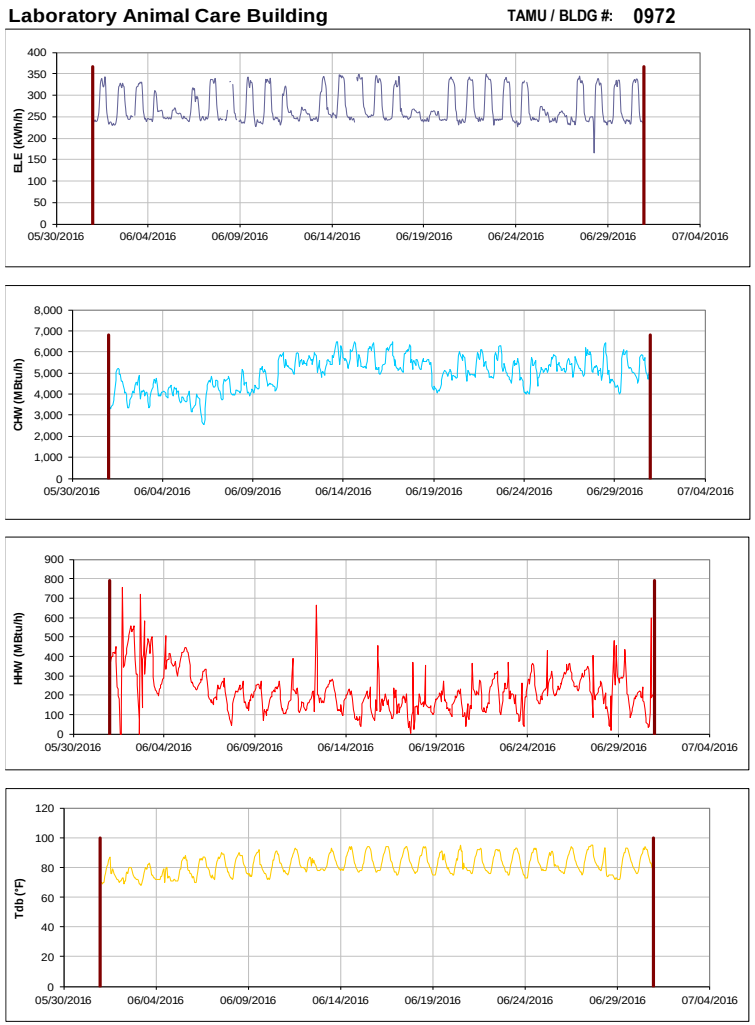


Figure III-121 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Laboratory Animal Care Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

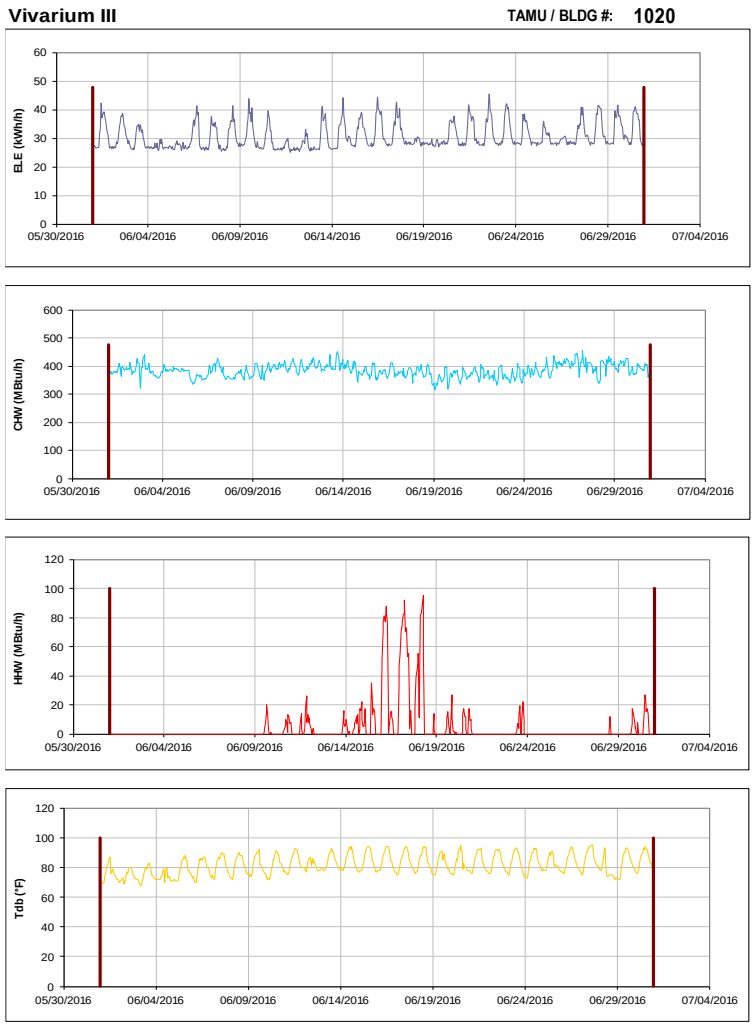


Figure III-122 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vivarium III during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

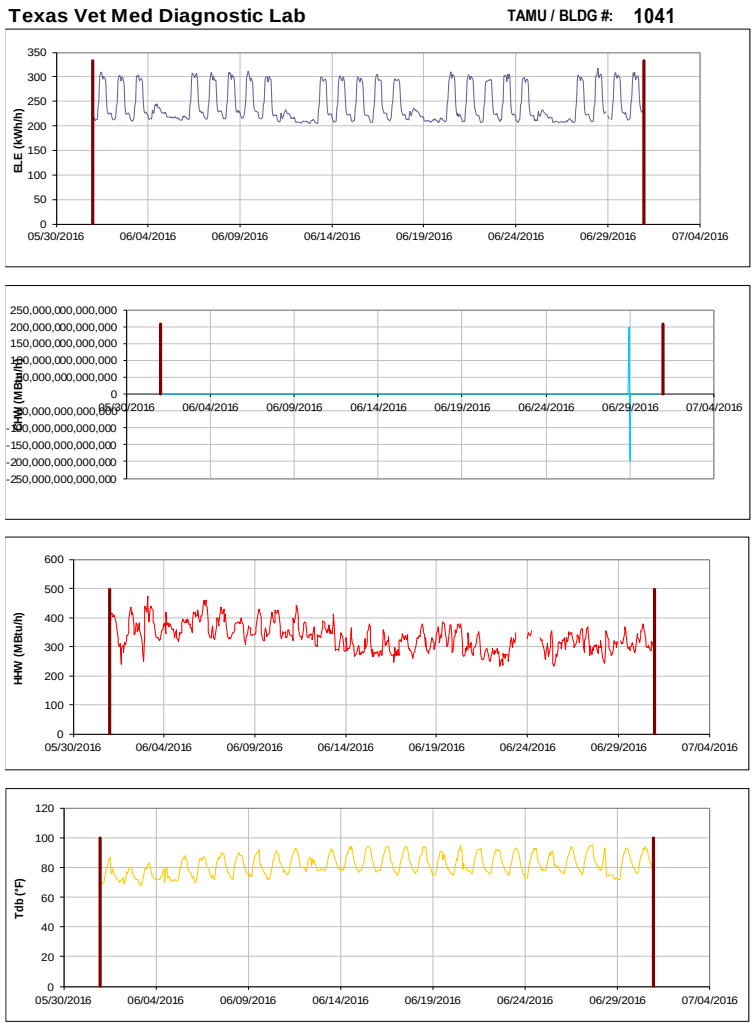


Figure III-123 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Vet Med Diagnostic Lab during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

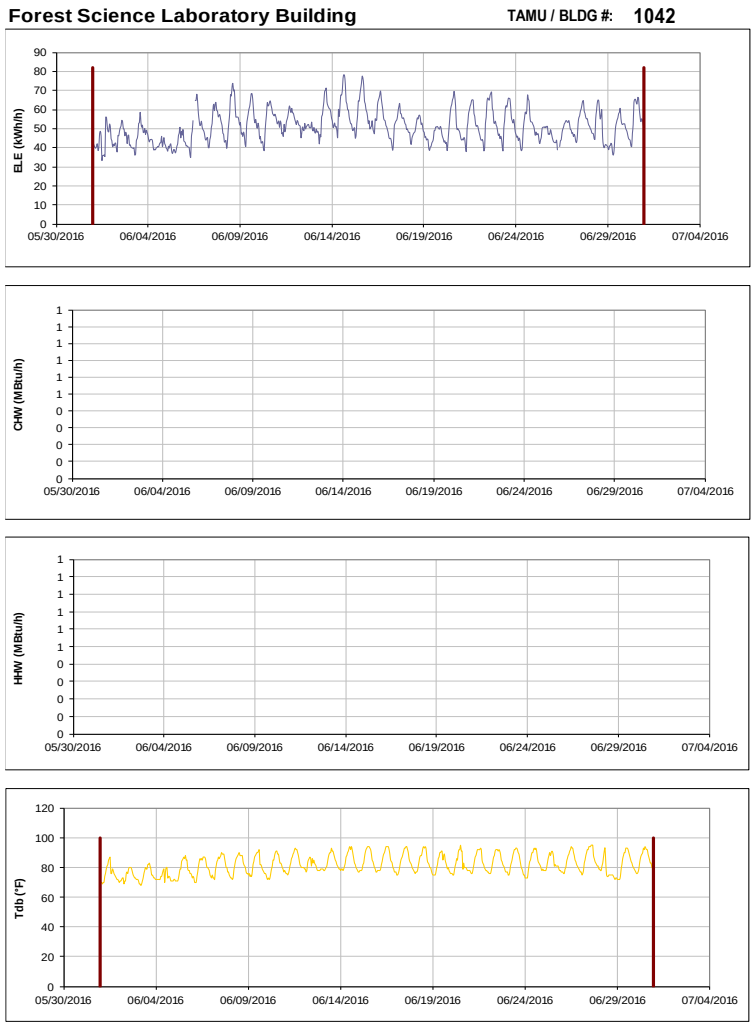


Figure III-124 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Forest Science Laboratory Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

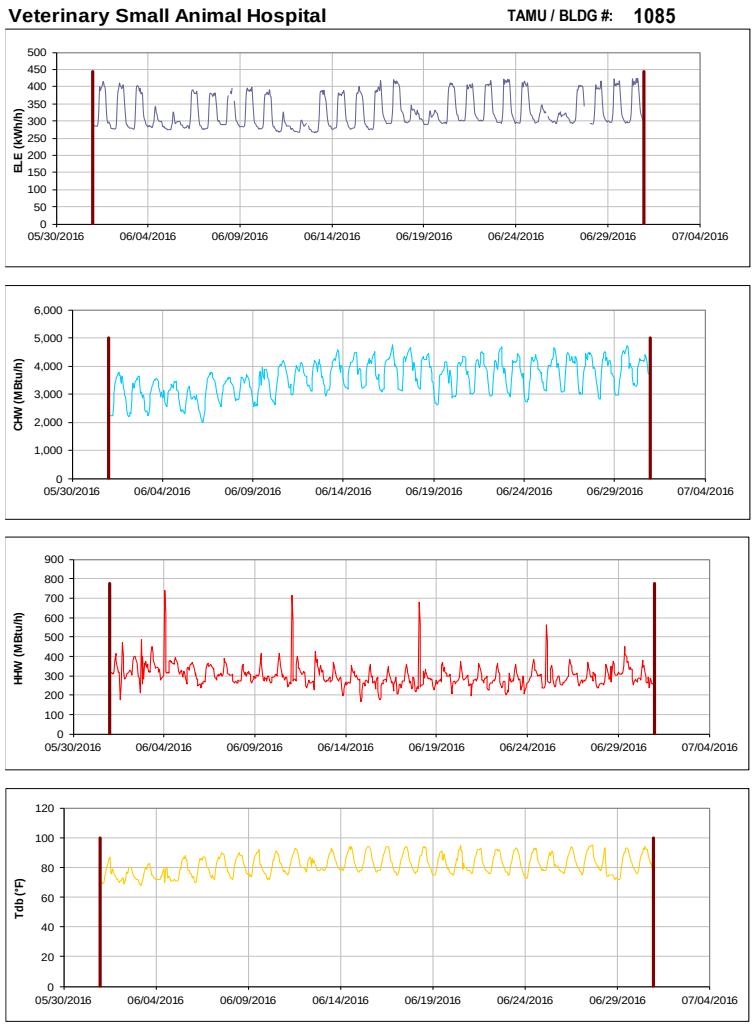


Figure III-125 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Small Animal Hospital during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

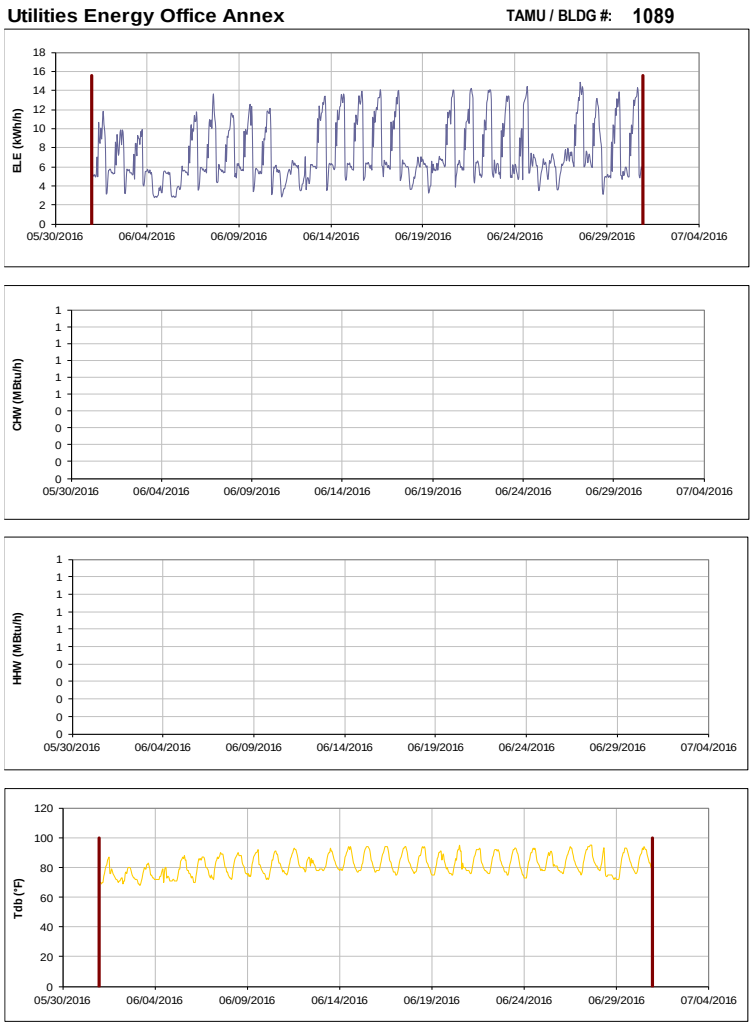


Figure III-126 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities Energy Office Annex during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

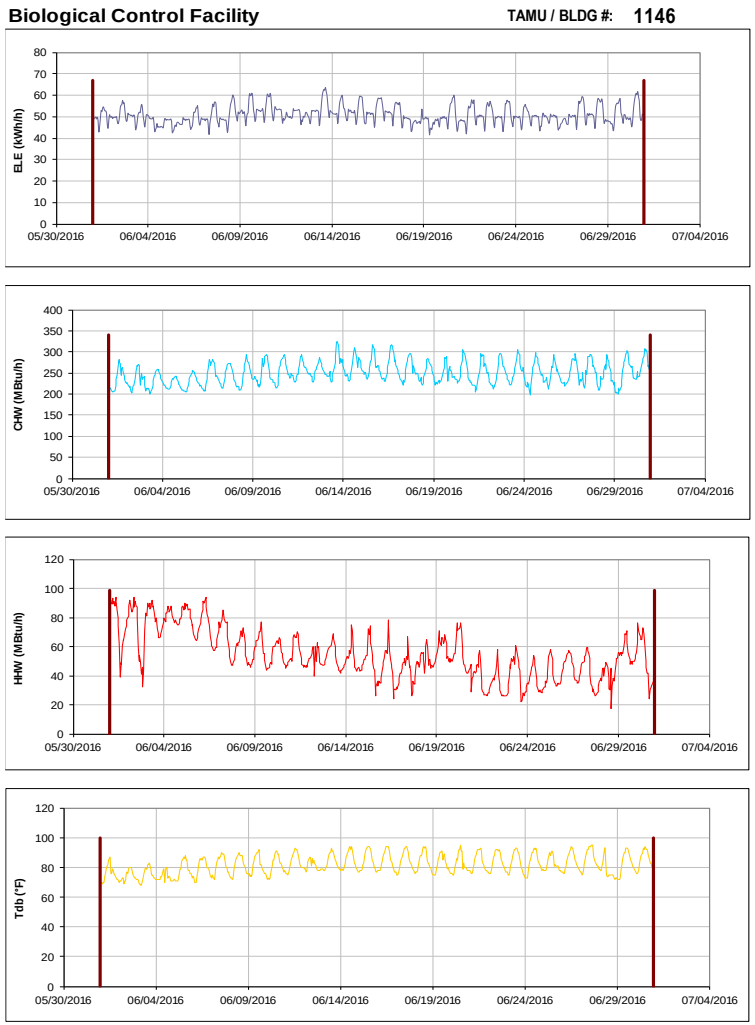


Figure III-127 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Control Facility during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

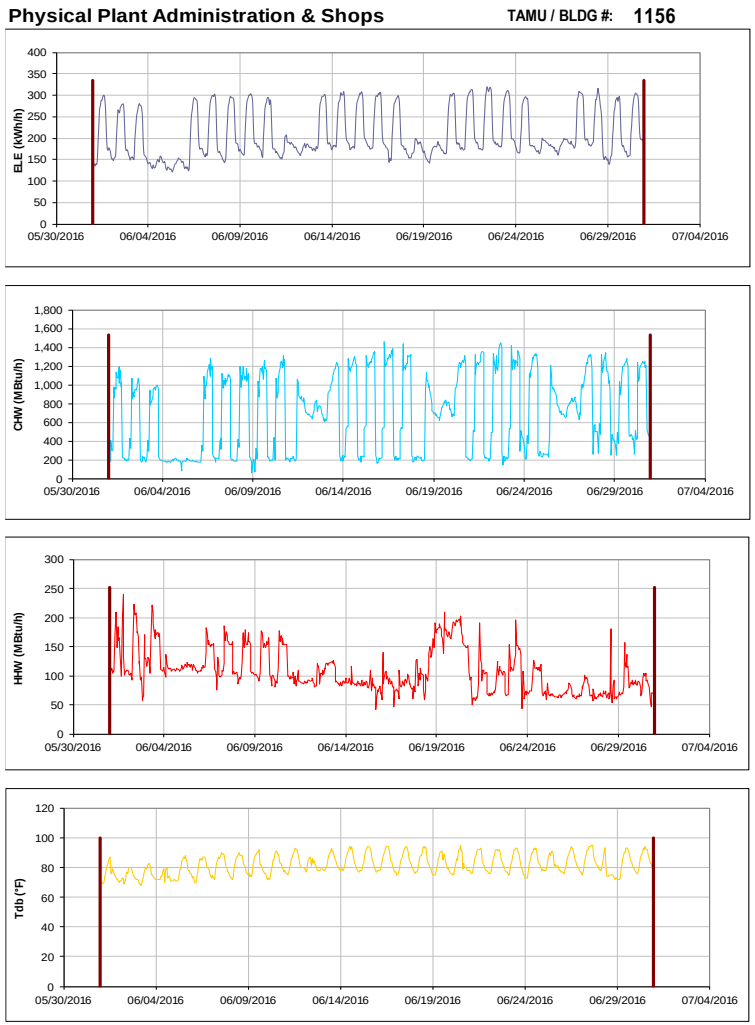


Figure III-128 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Plant Administration & Shops during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

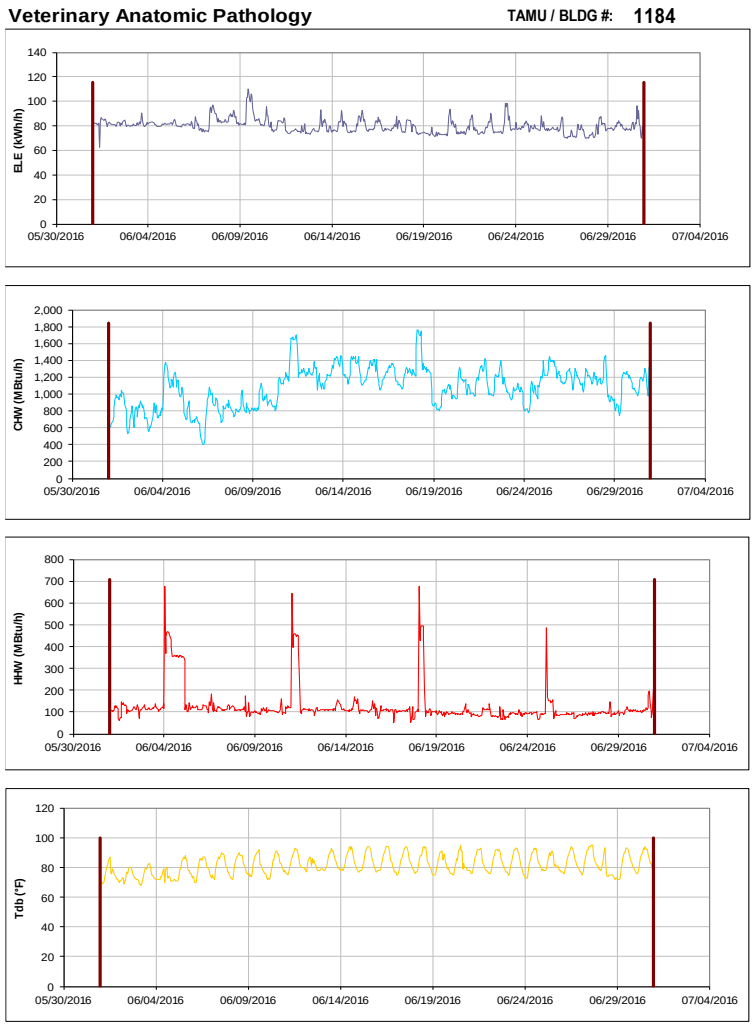


Figure III-129 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Anatomic Pathology during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

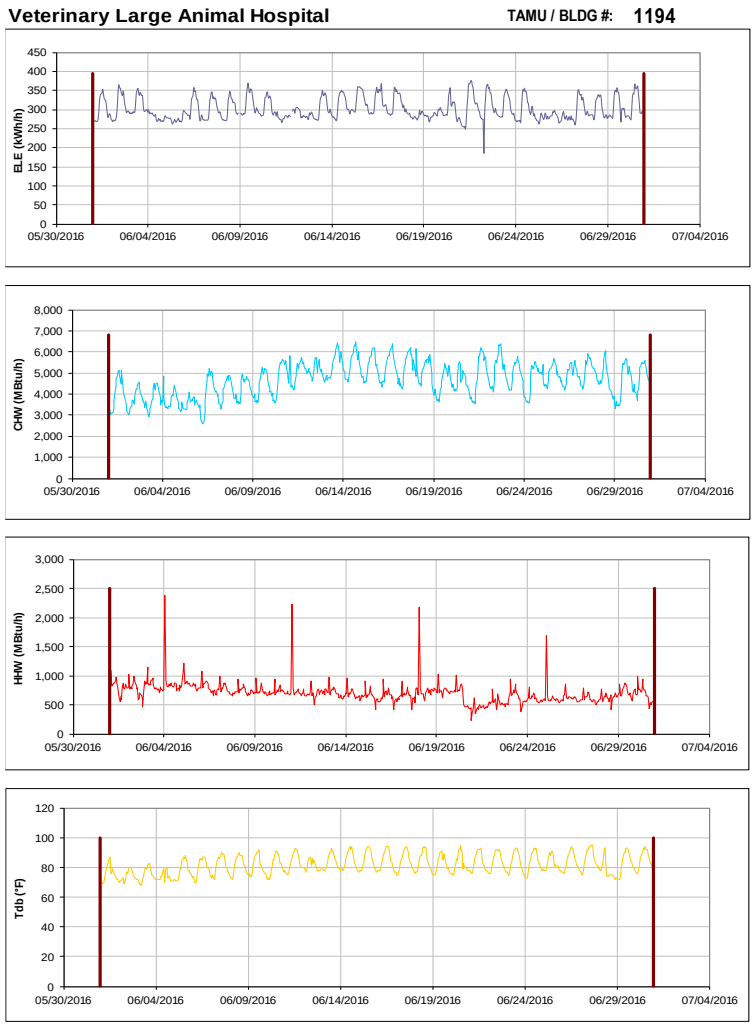


Figure III-130 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Large Animal Hospital during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

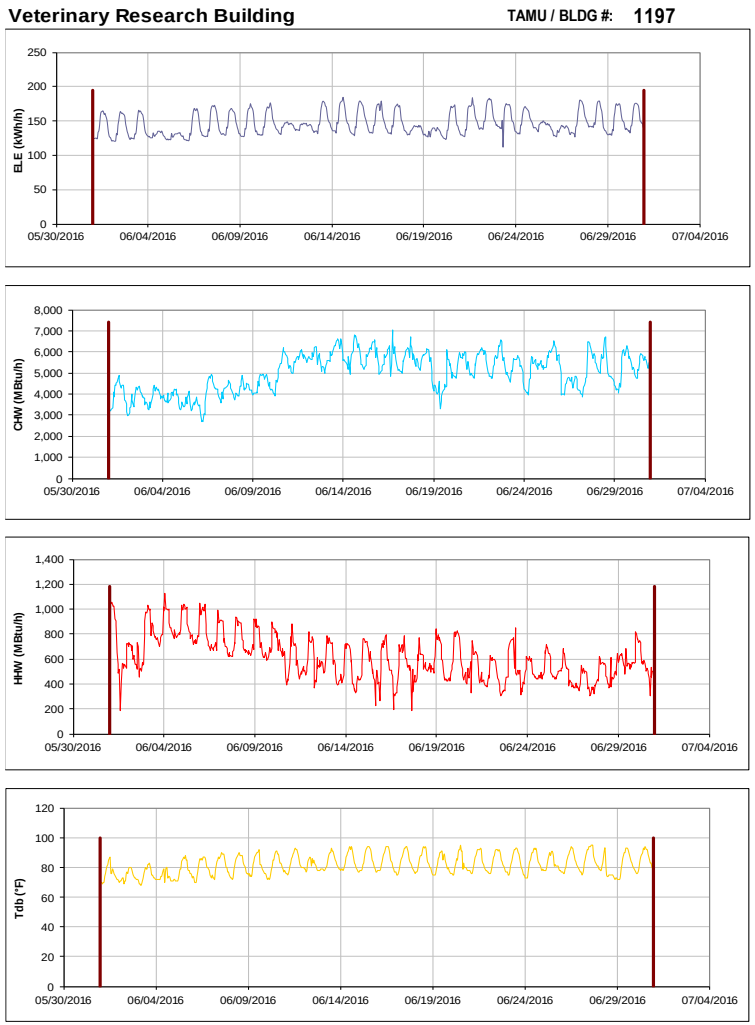


Figure III-131 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Research Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

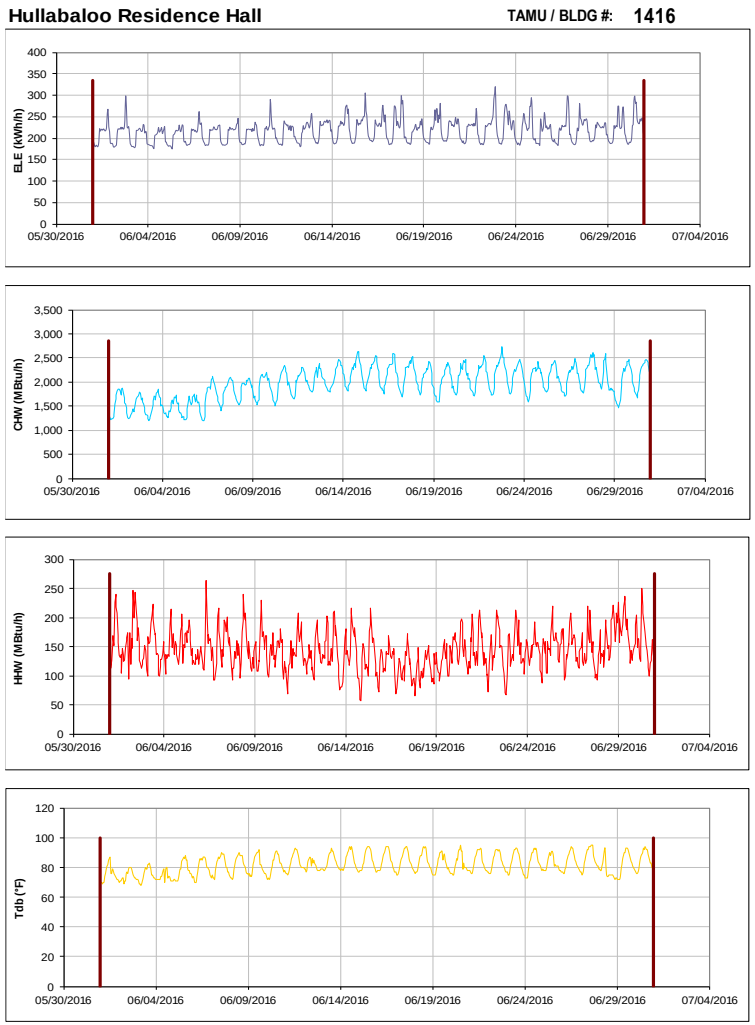


Figure III-132 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hullabaloo Residence Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

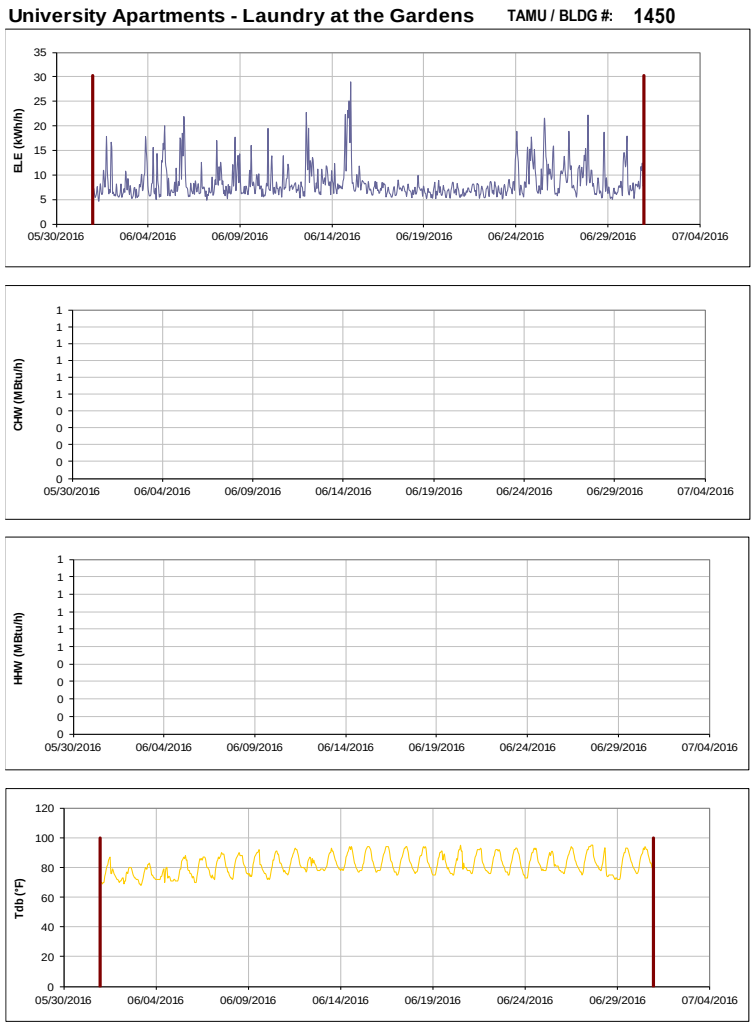


Figure III-133 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - Laundry at the Gardens during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

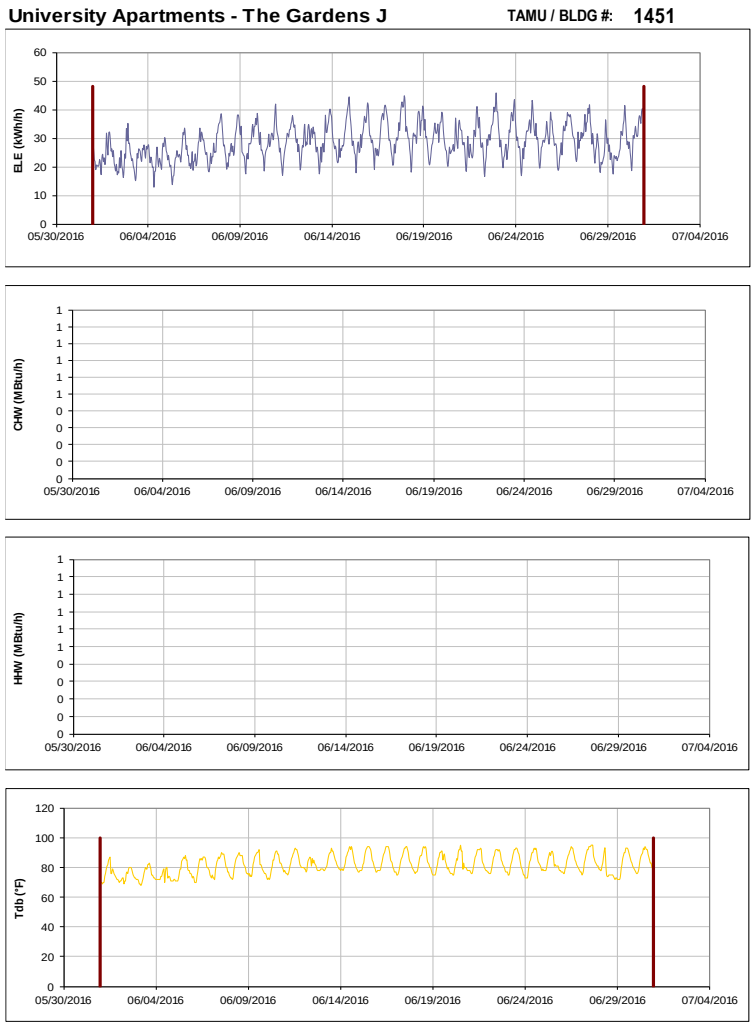


Figure III-134 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens J during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

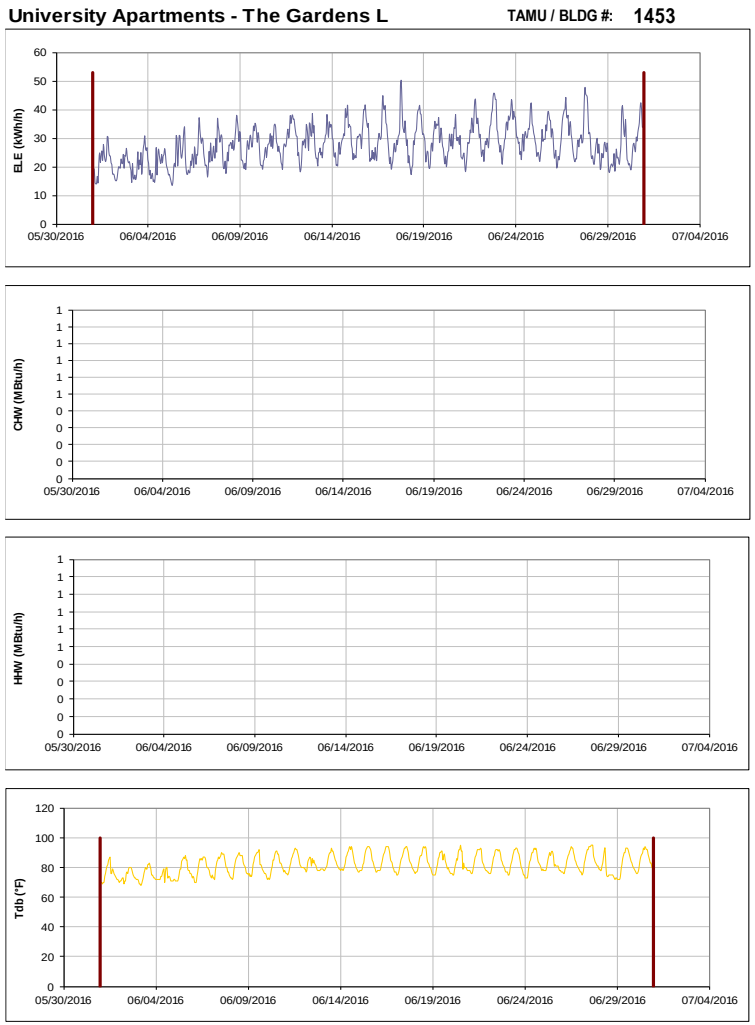


Figure III-135 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens L during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

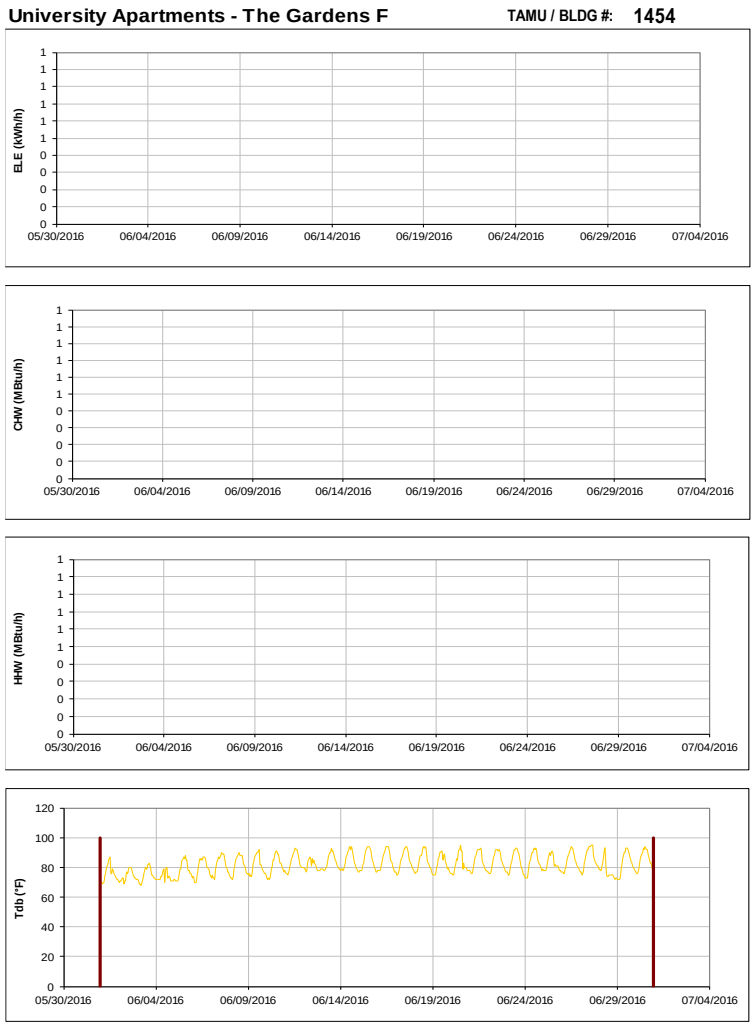


Figure III-136 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens F during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

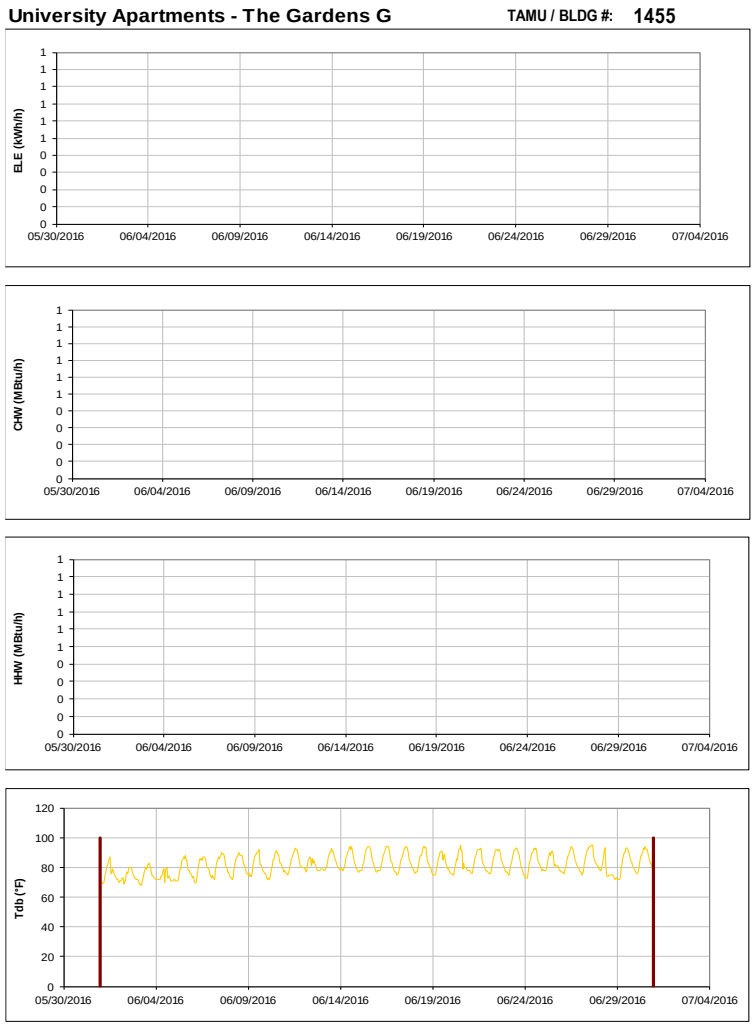


Figure III-137 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens G during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

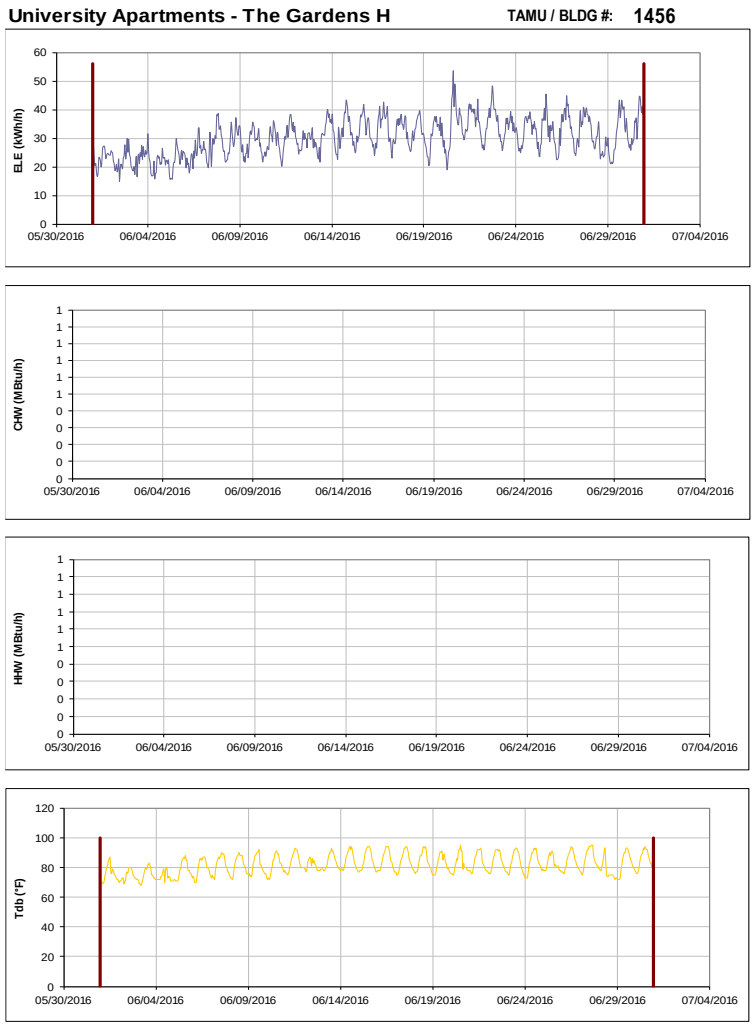


Figure III-138 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens H during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

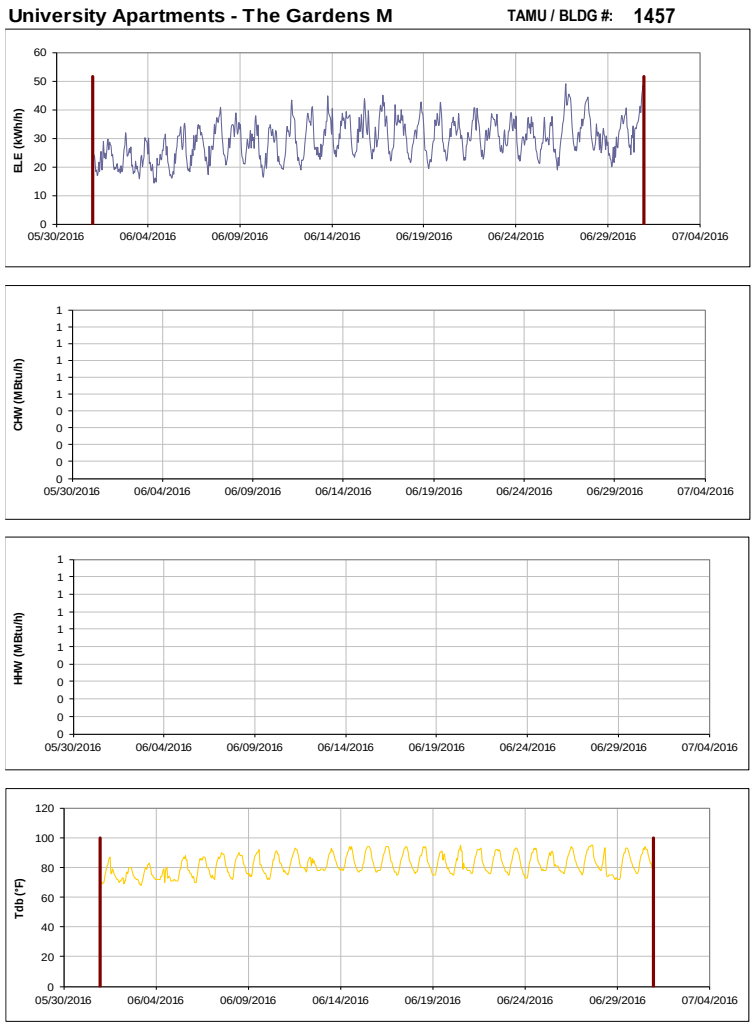


Figure III-139 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens M during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

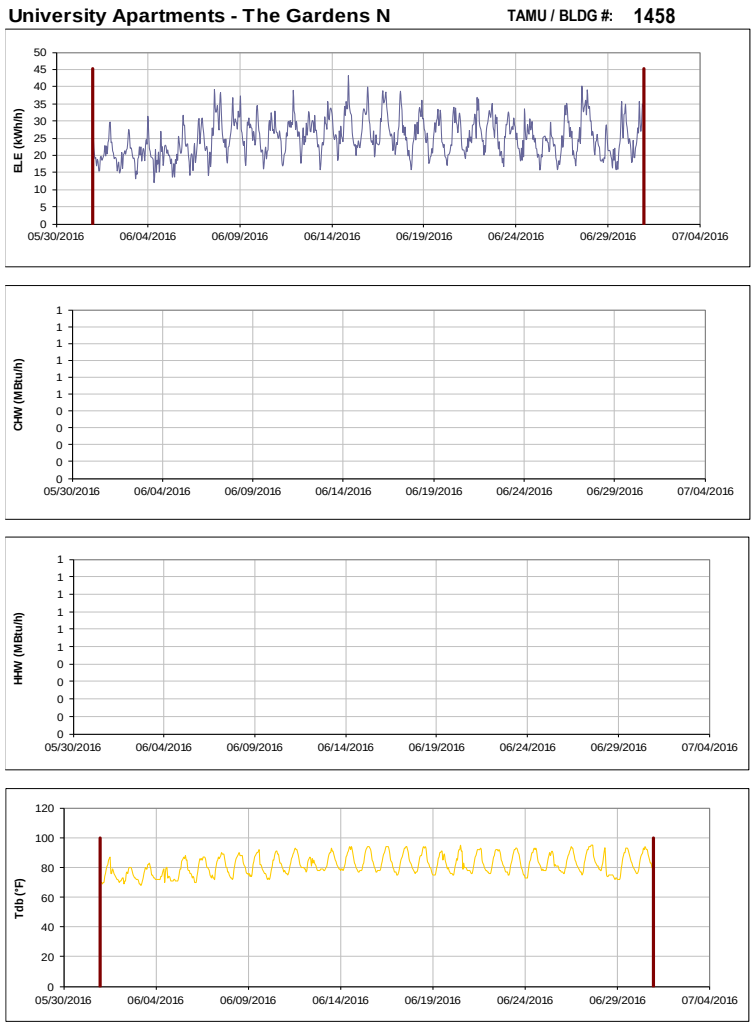


Figure III-140 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens N during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

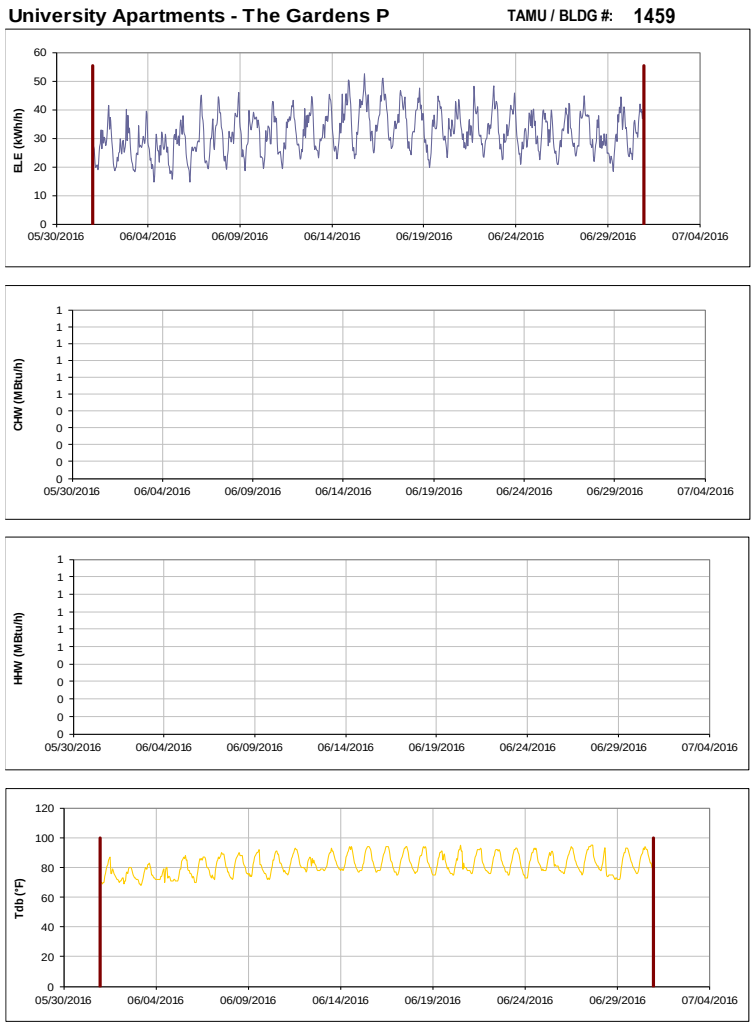


Figure III-141 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens P during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

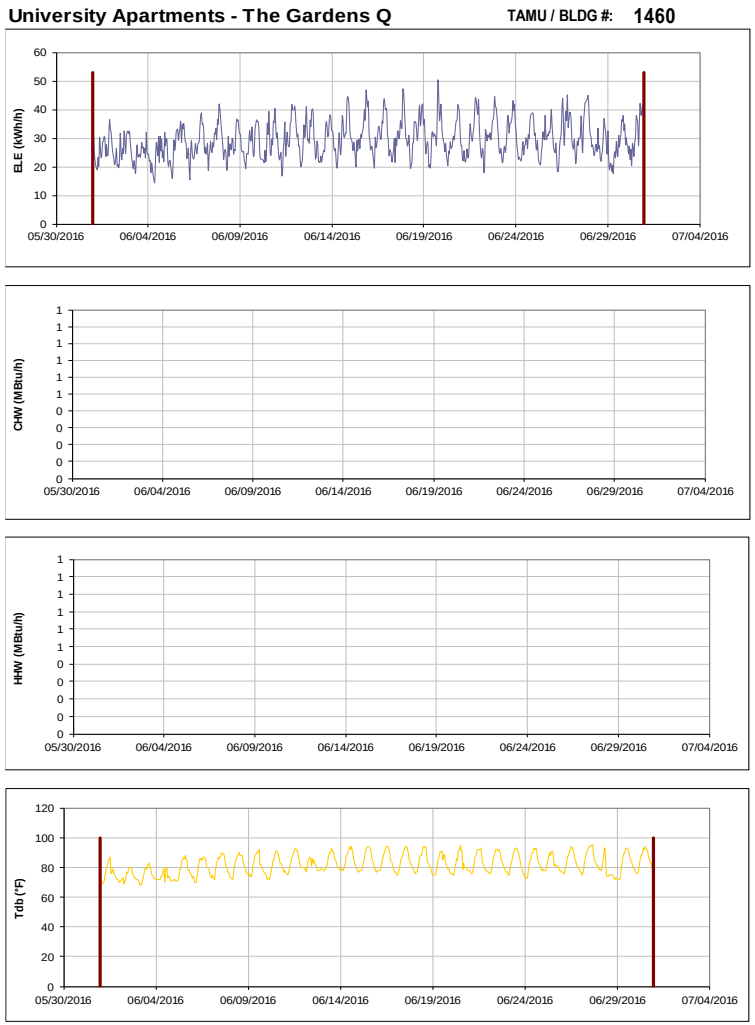


Figure III-142 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens Q during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

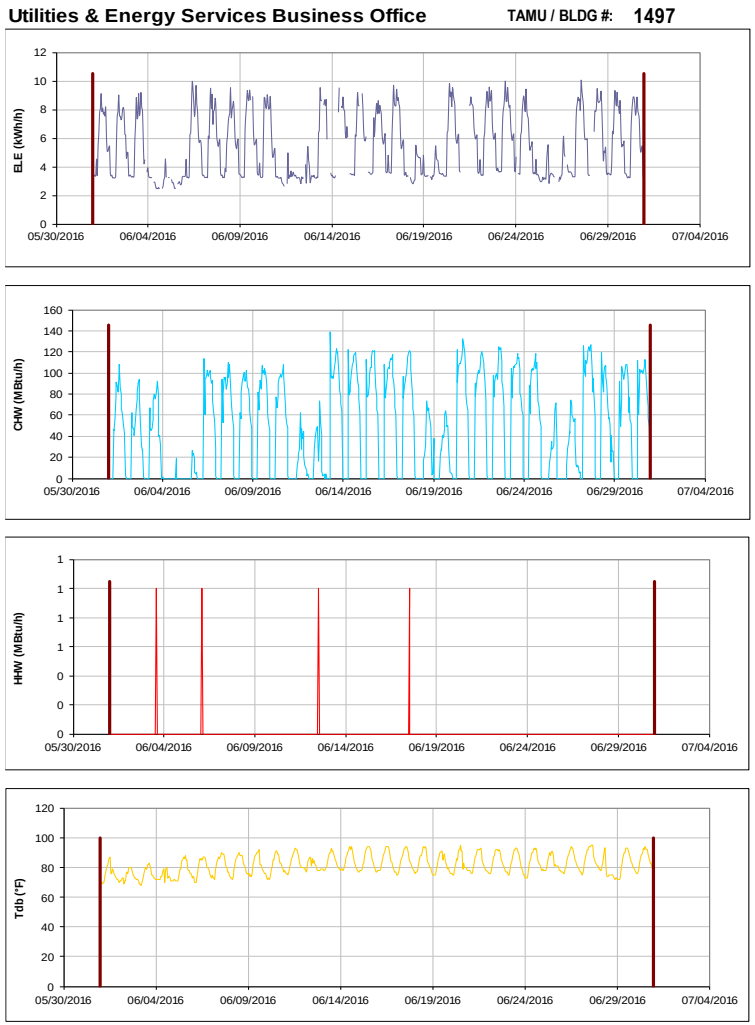


Figure III-143 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Business Office during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

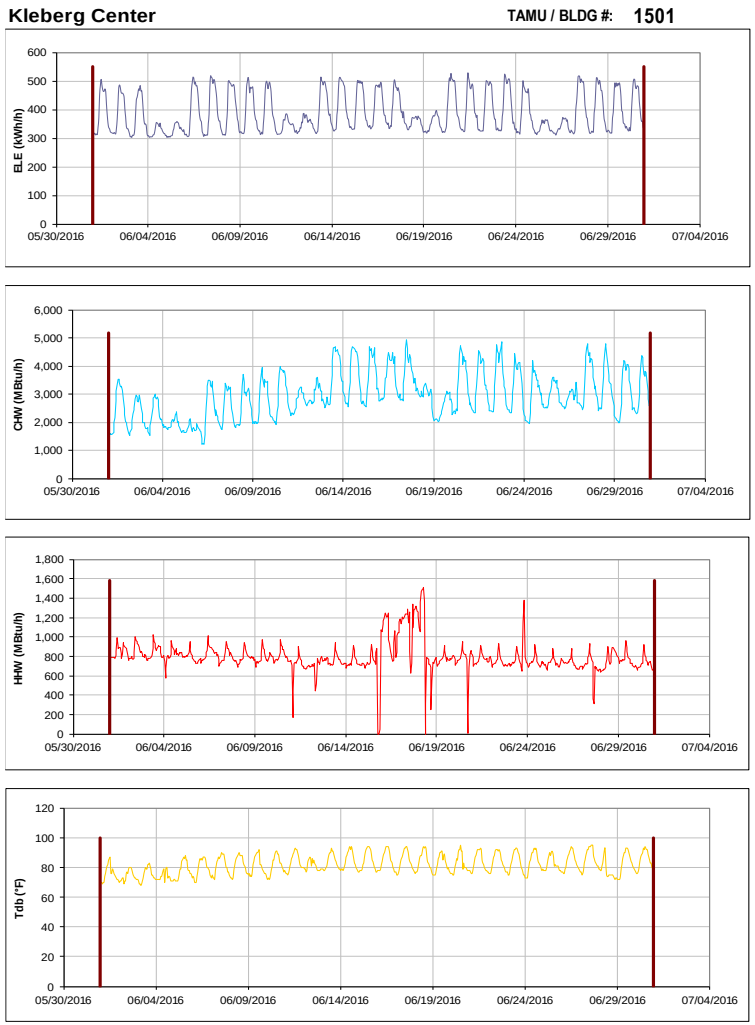


Figure III-144 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kleberg Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

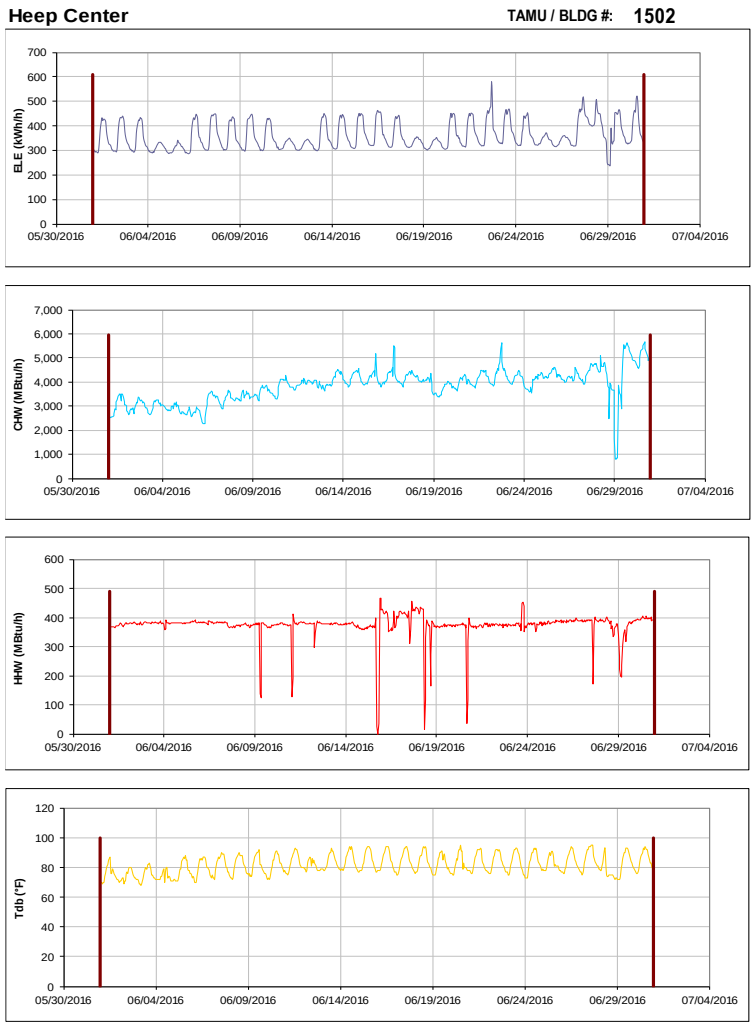


Figure III-145 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

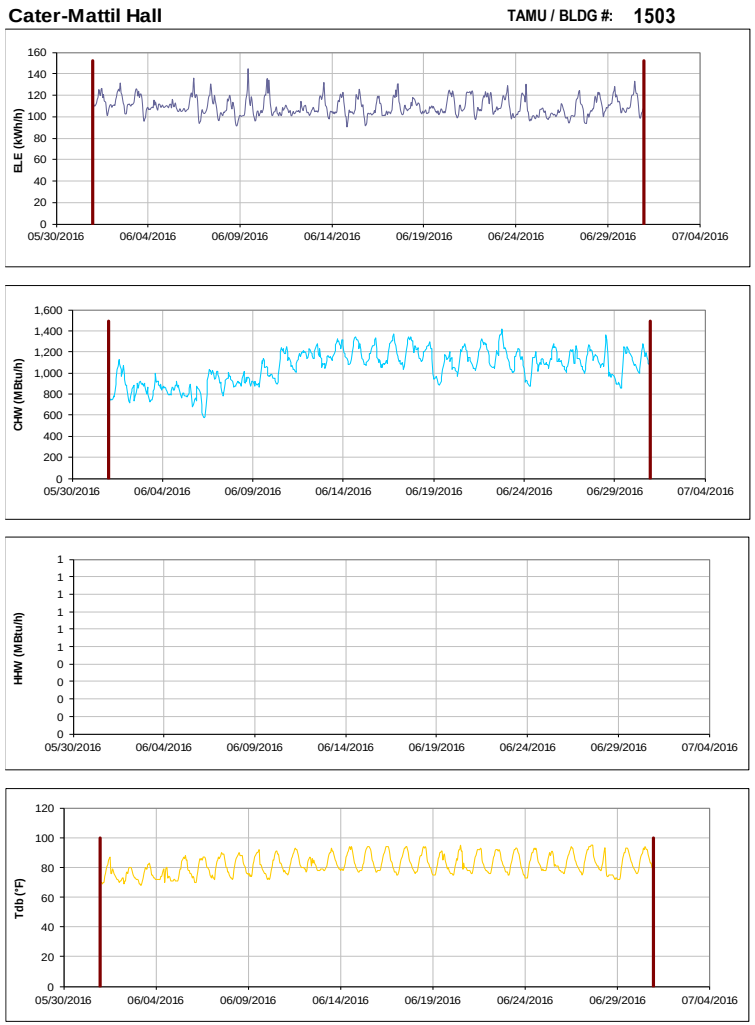


Figure III-146 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cater-Mattil Hall during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

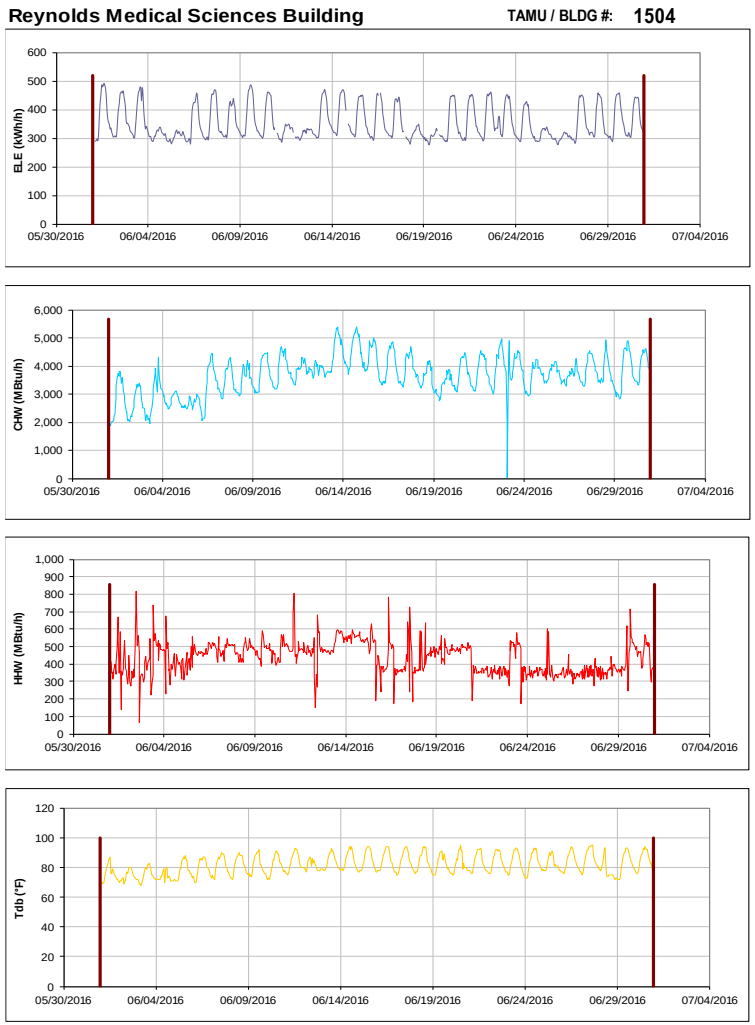


Figure III-147 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reynolds Medical Sciences Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

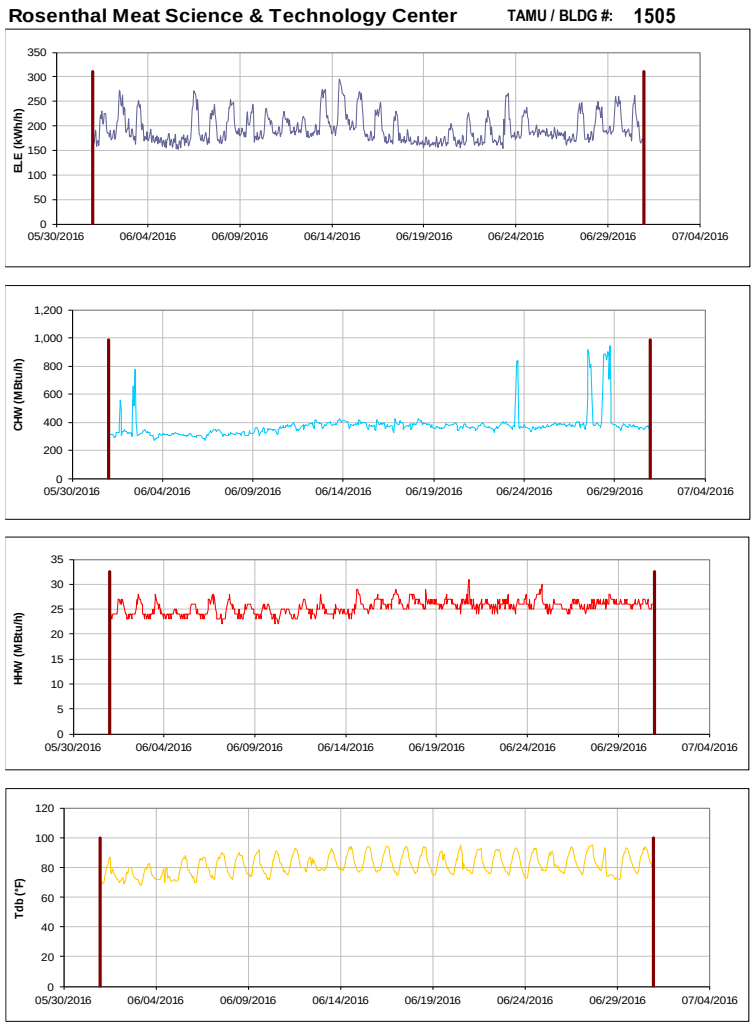


Figure III-148 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rosenthal Meat Science & Technology Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

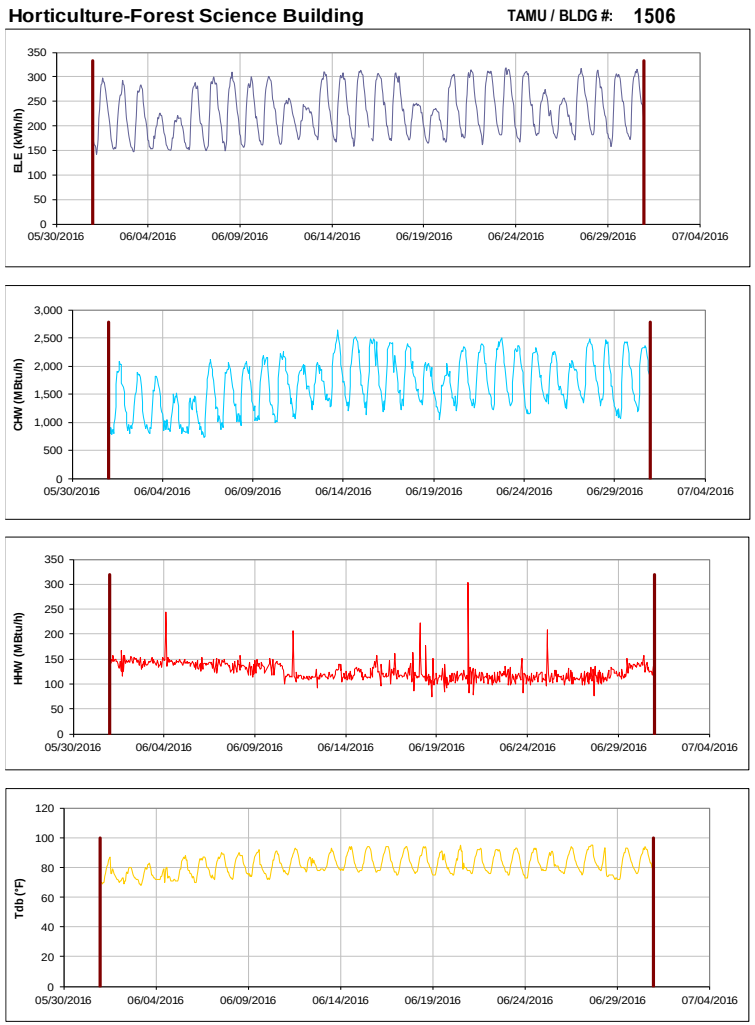


Figure III-149 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Horticulture-Forest Science Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

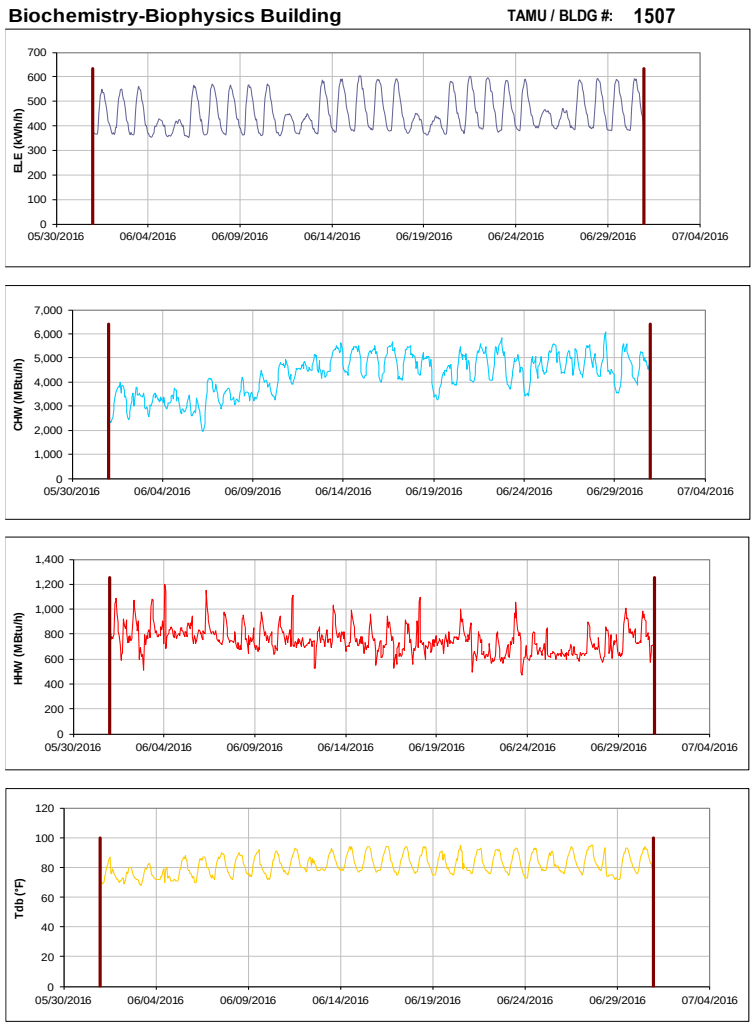


Figure III-150 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biochemistry-Biophysics Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

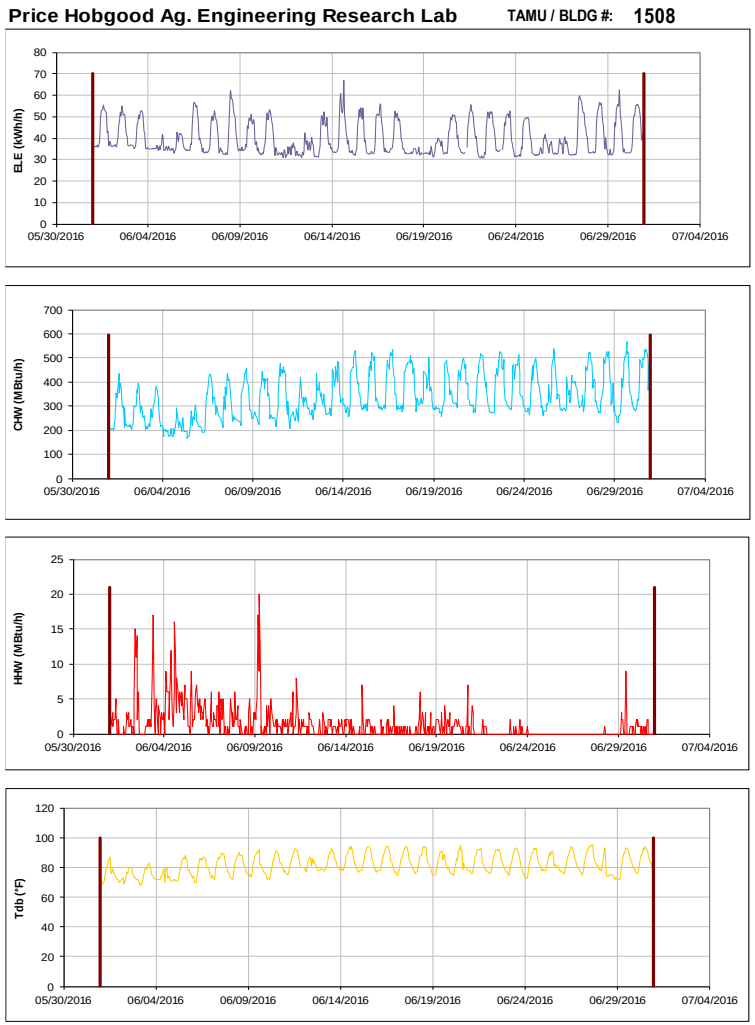


Figure III-151 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Price Hobgood Ag. Engineering Research Lab during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

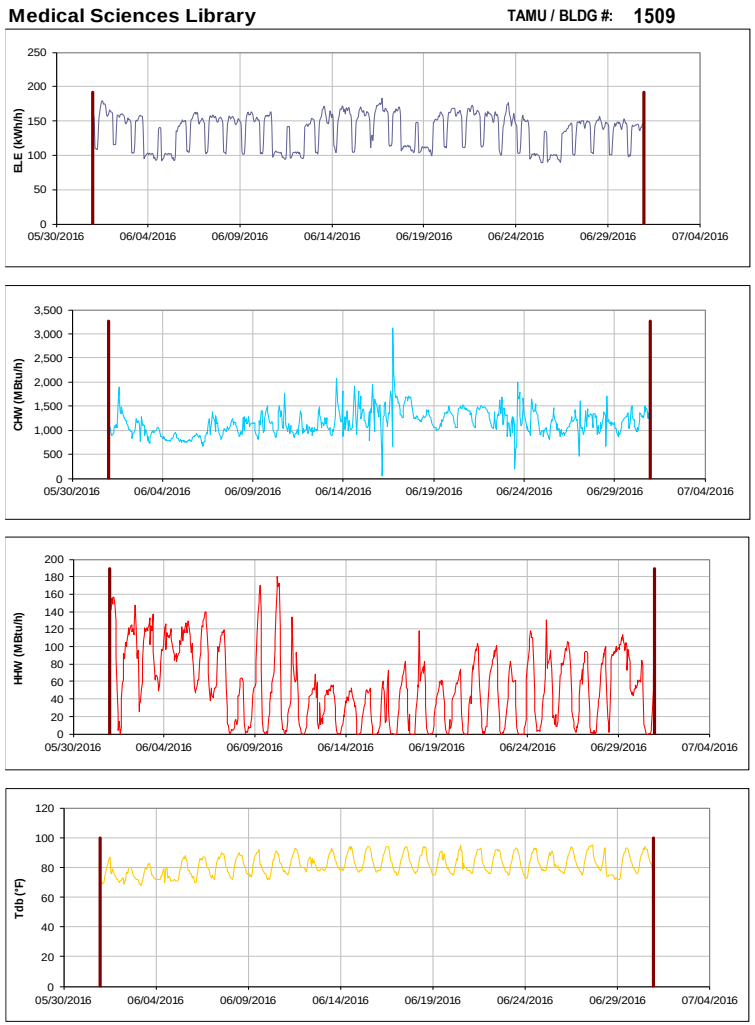


Figure III-152 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Medical Sciences Library during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

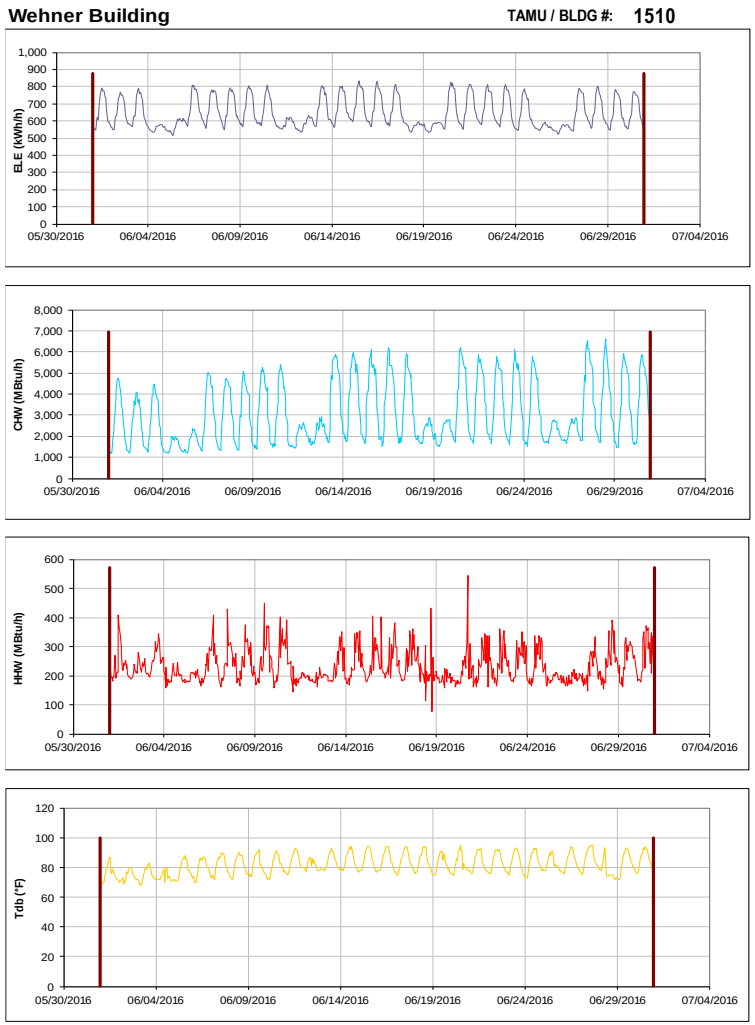


Figure III-153 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wehner Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

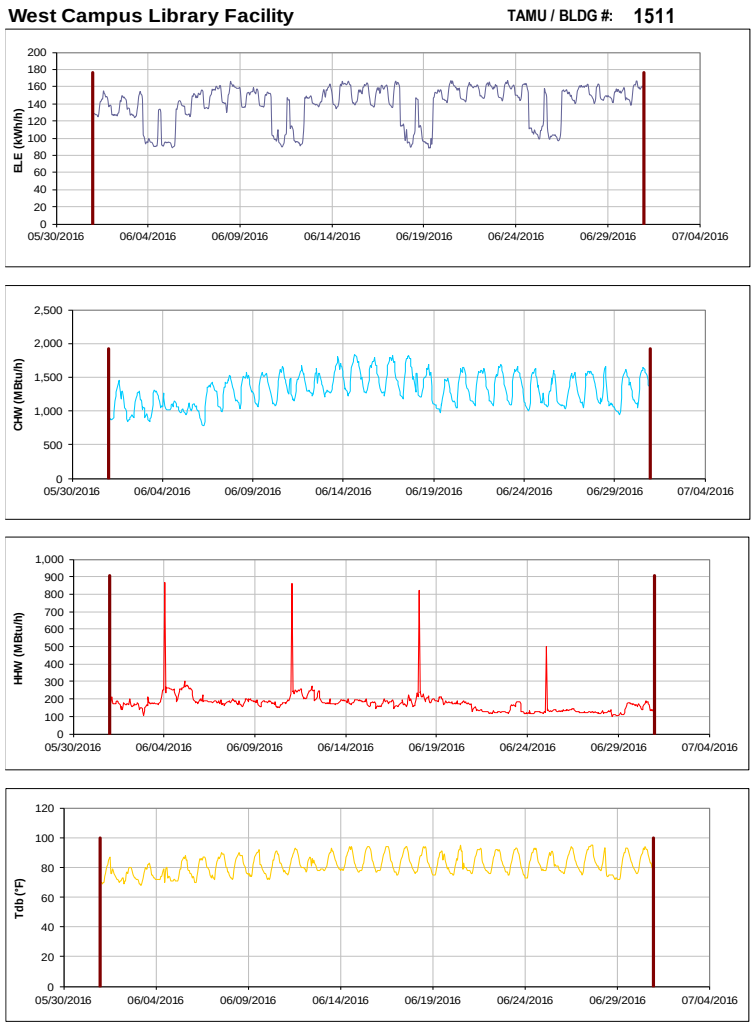


Figure III-154 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Library Facility during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

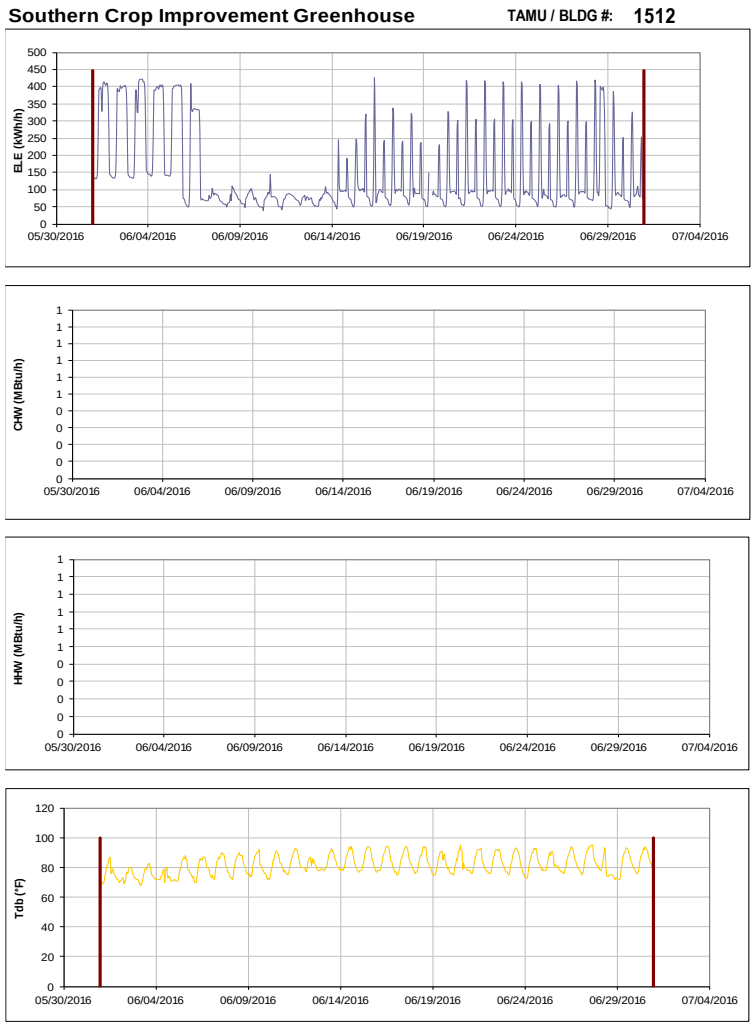


Figure III-155 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Southern Crop Improvement Greenhouse during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

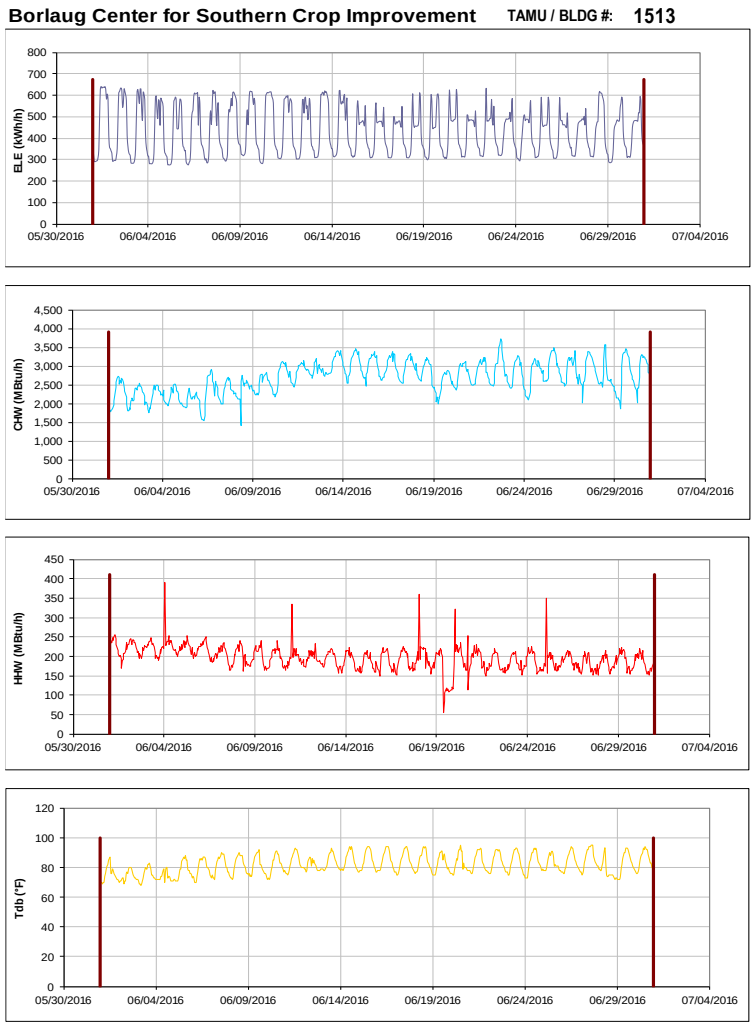


Figure III-156 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Borlaug Center for Southern Crop Improvement during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

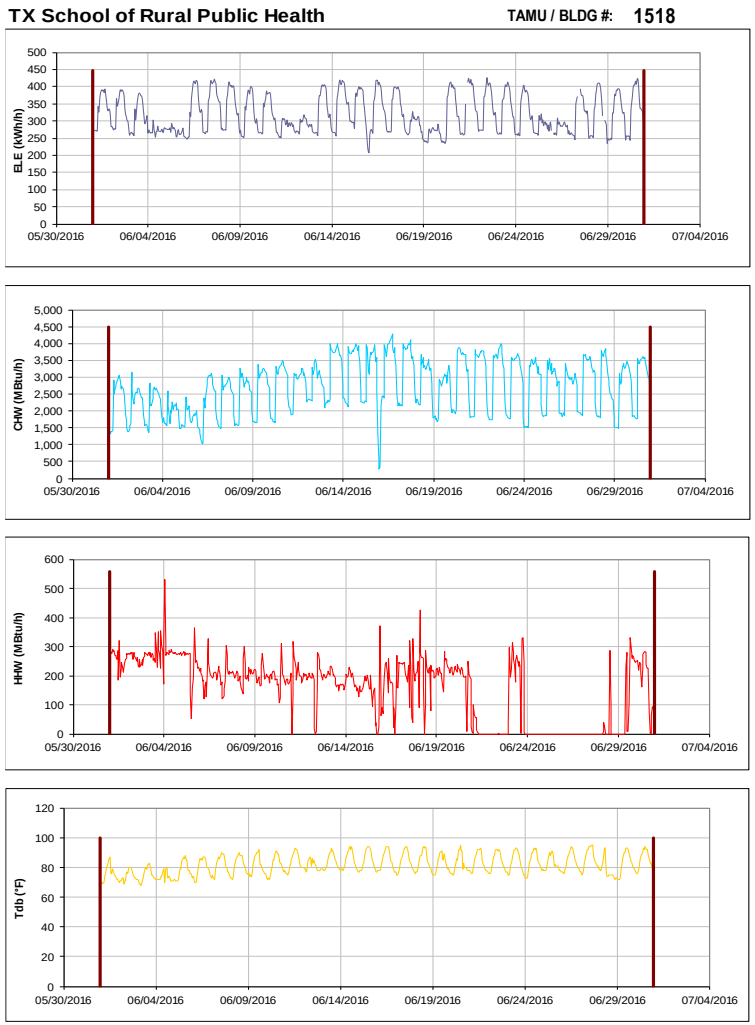


Figure III-157 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TX School of Rural Public Health during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

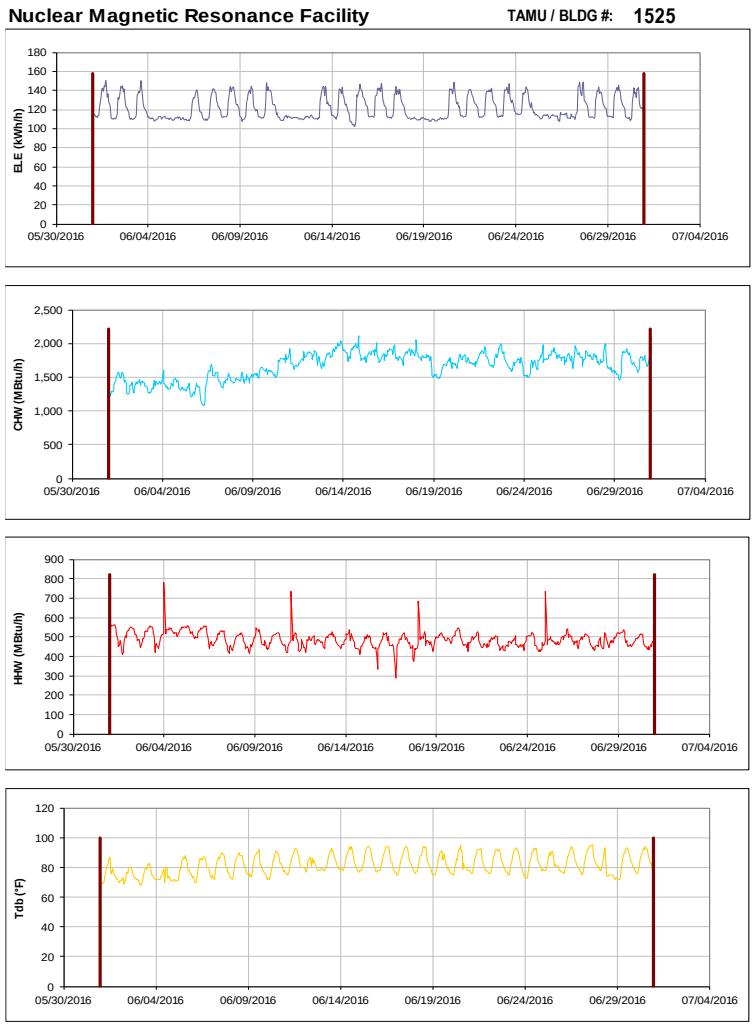


Figure III-158 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nuclear Magnetic Resonance Facility during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

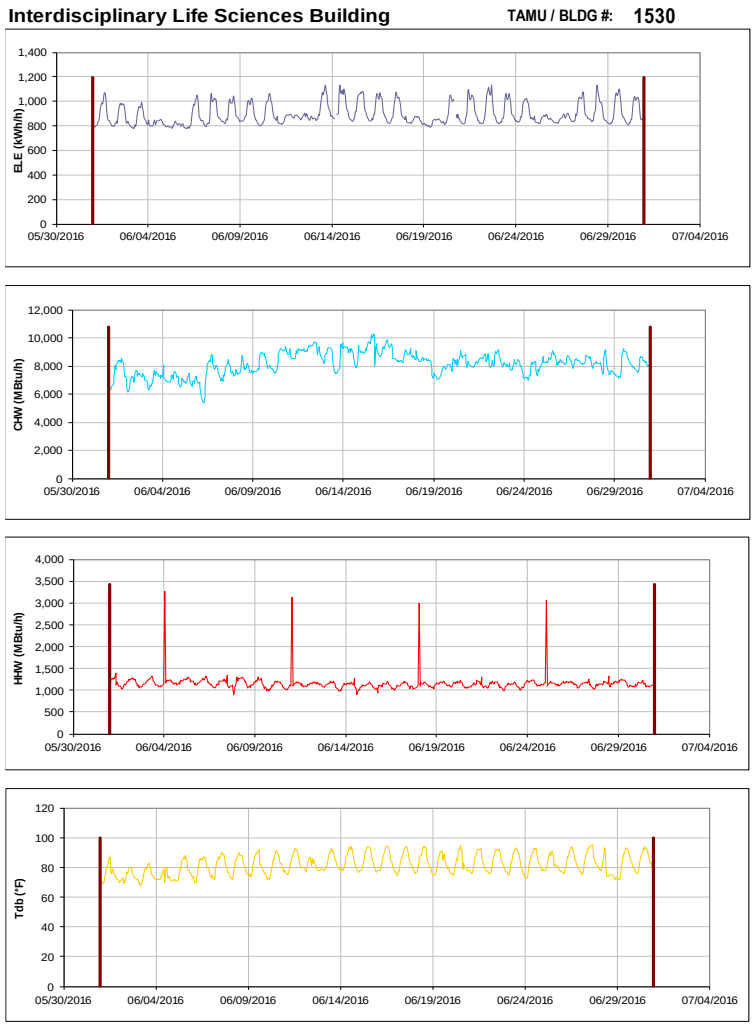


Figure III-159 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Interdisciplinary Life Sciences Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

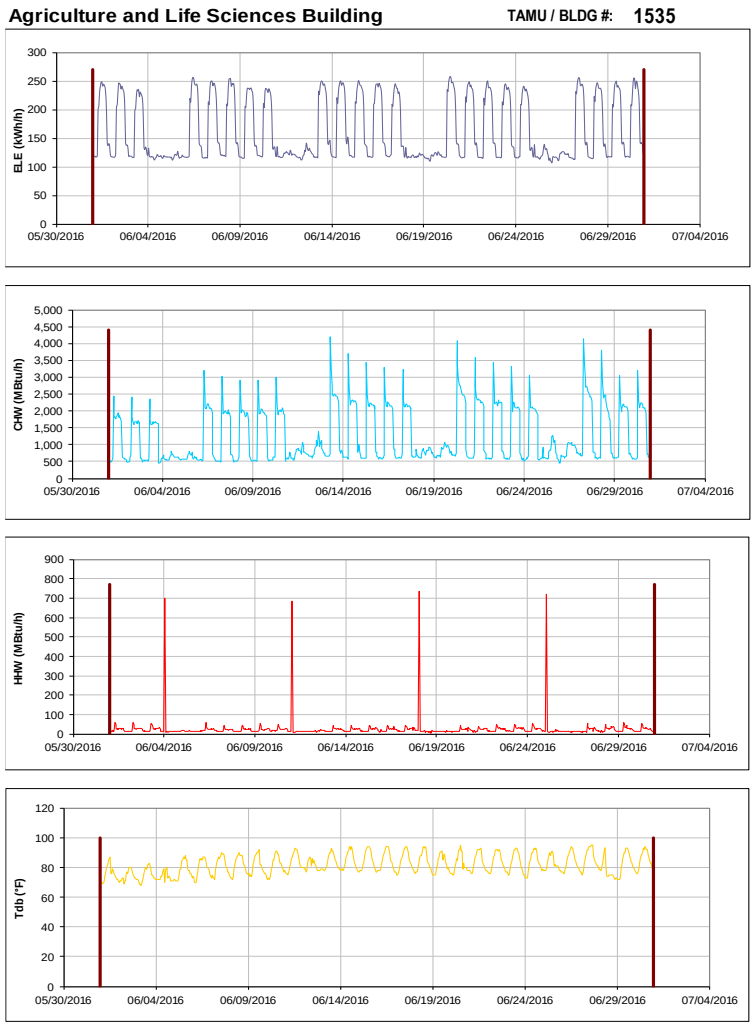


Figure III-160 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture and Life Sciences Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

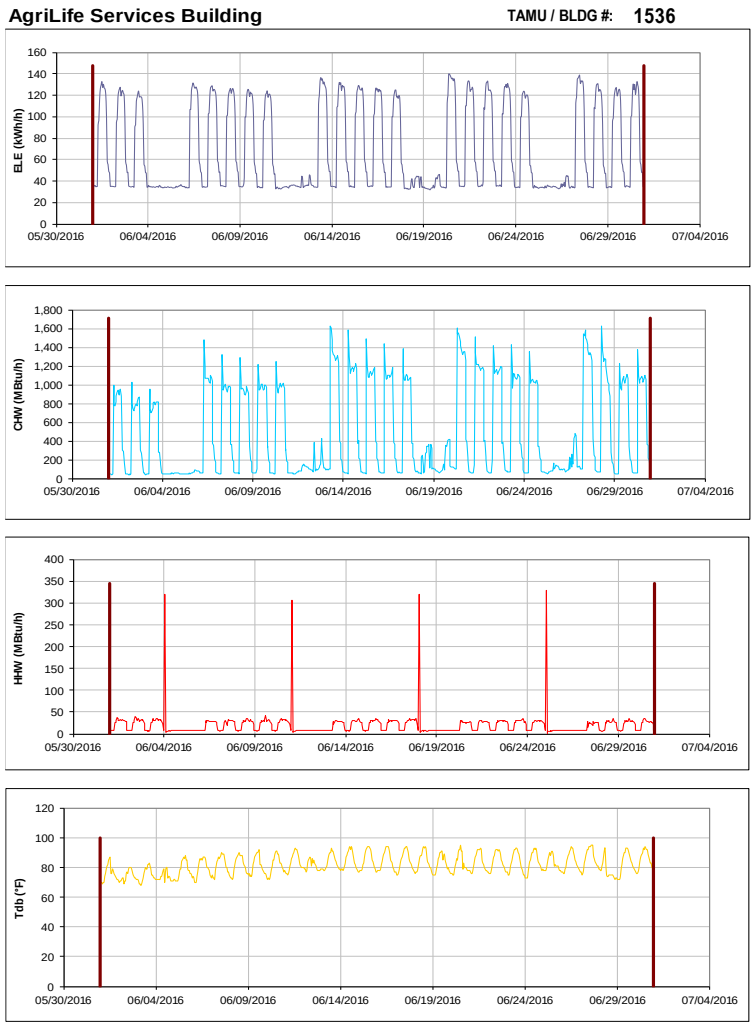


Figure III-161 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for AgriLife Services Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

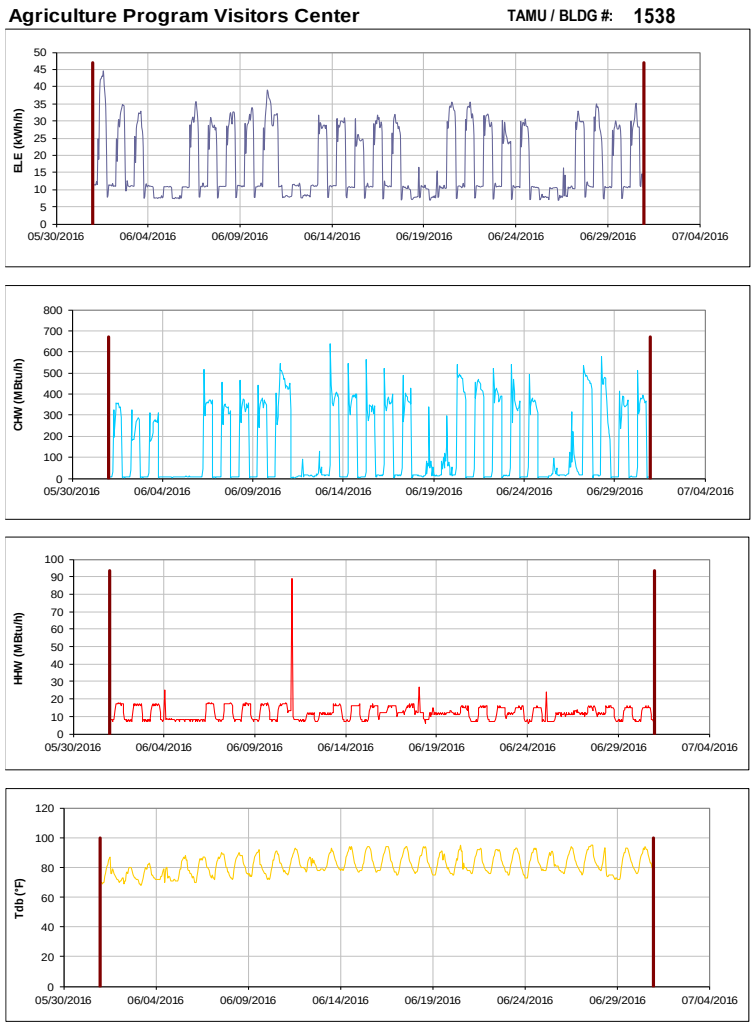


Figure III-162 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Program Visitors Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

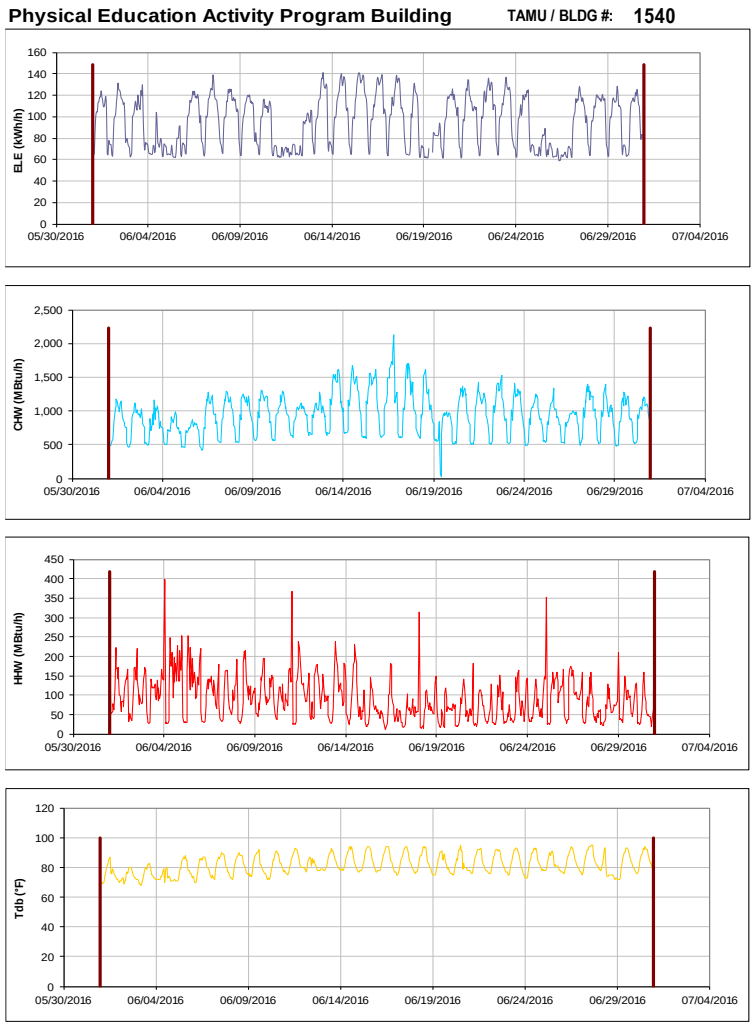


Figure III-163 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Education Activity Program Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

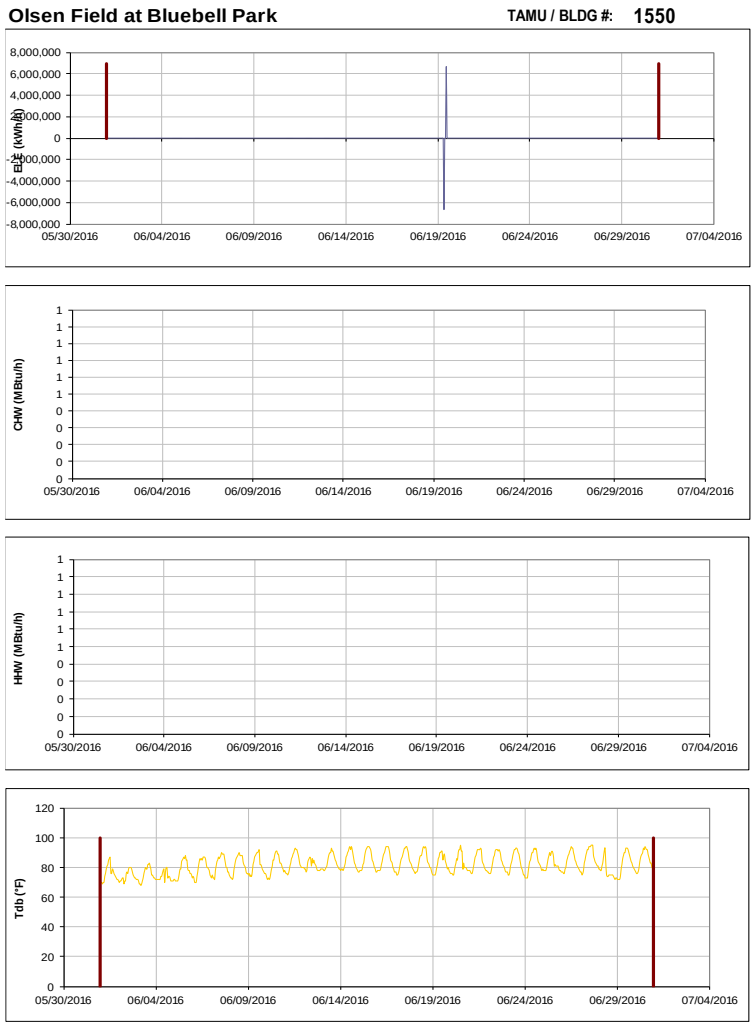


Figure III-164 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Olsen Field at Bluebell Park during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

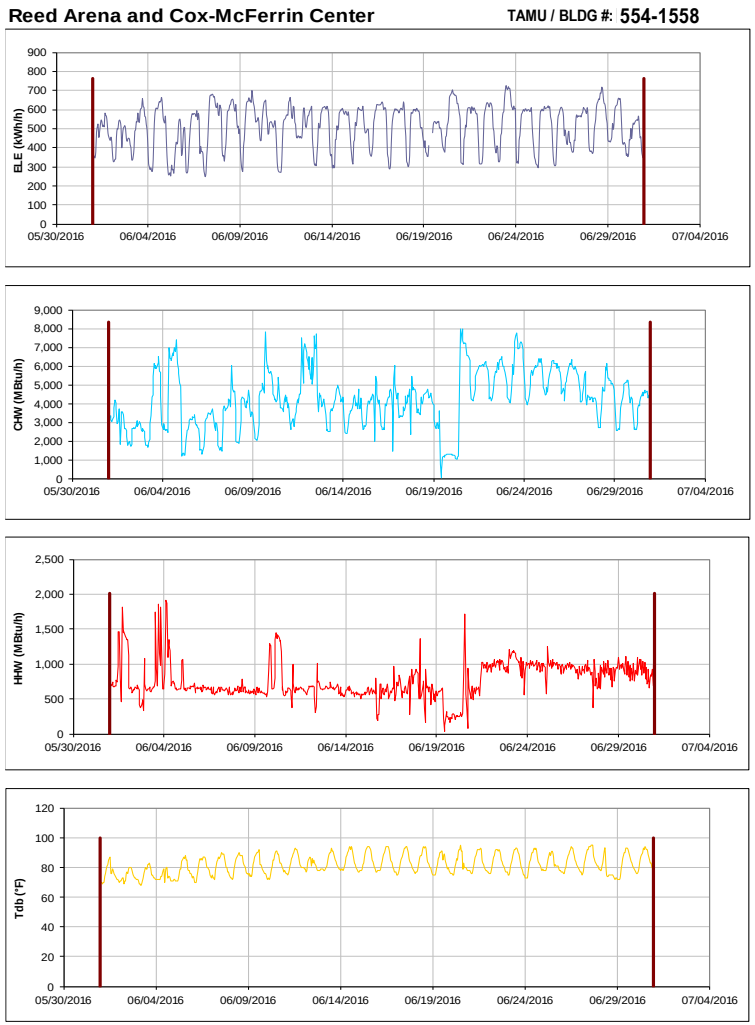


Figure III-165 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed Arena and Cox-McFerrin Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

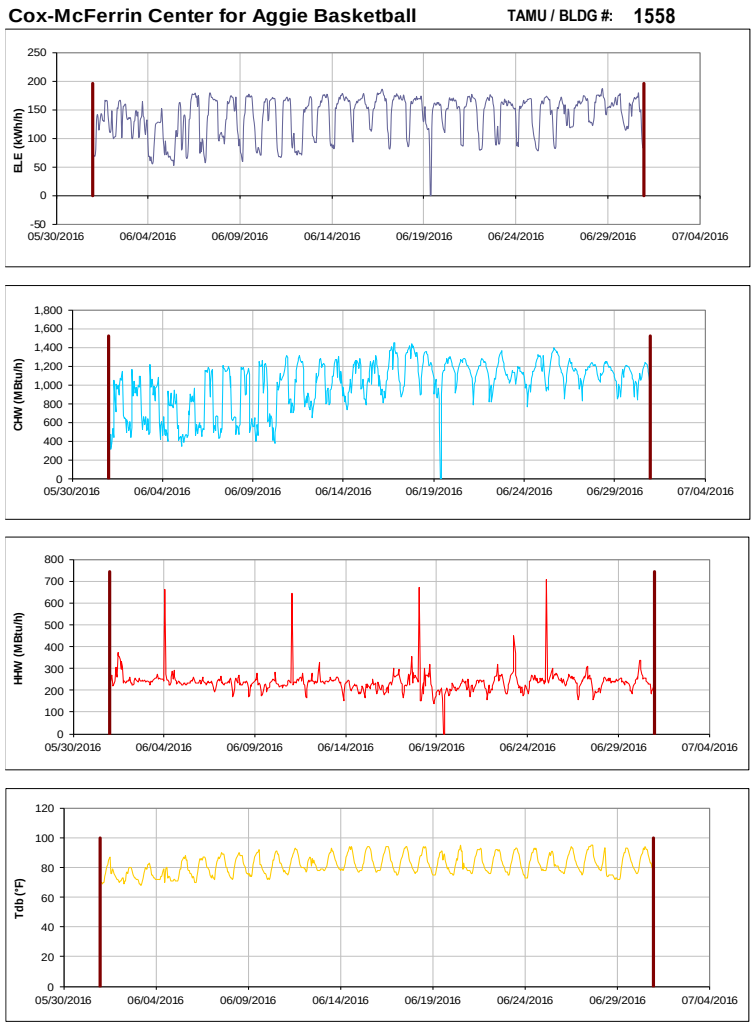


Figure III-166 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cox-McFerrin Center for Aggie Basketball during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

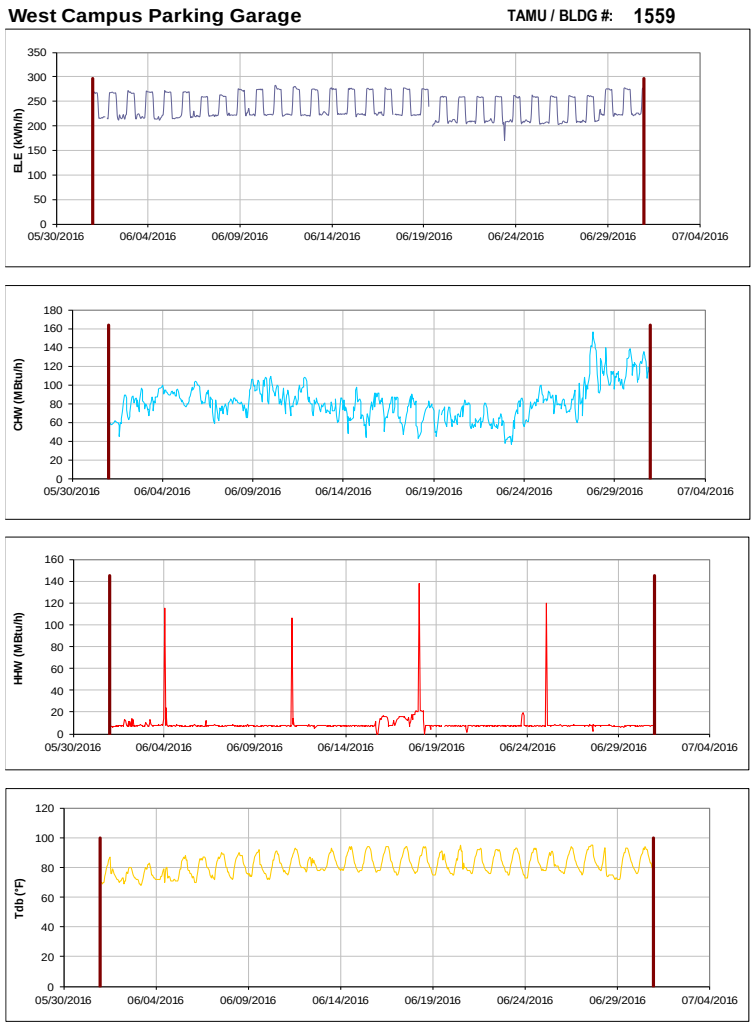


Figure III-167 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Parking Garage during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

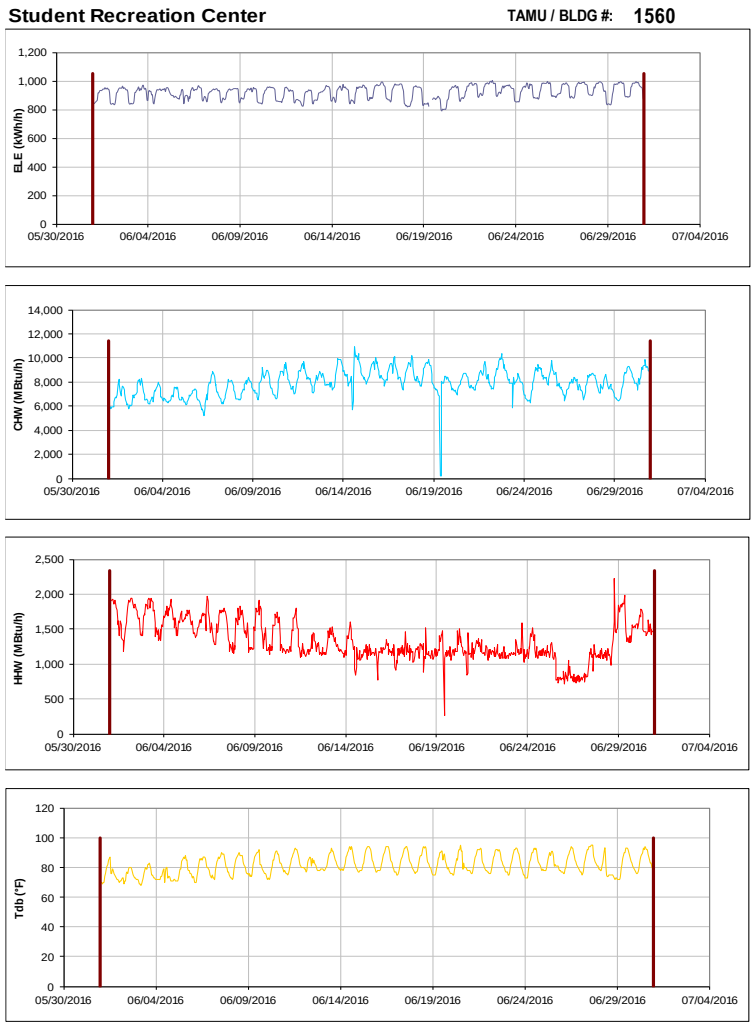


Figure III-168 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Student Recreation Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

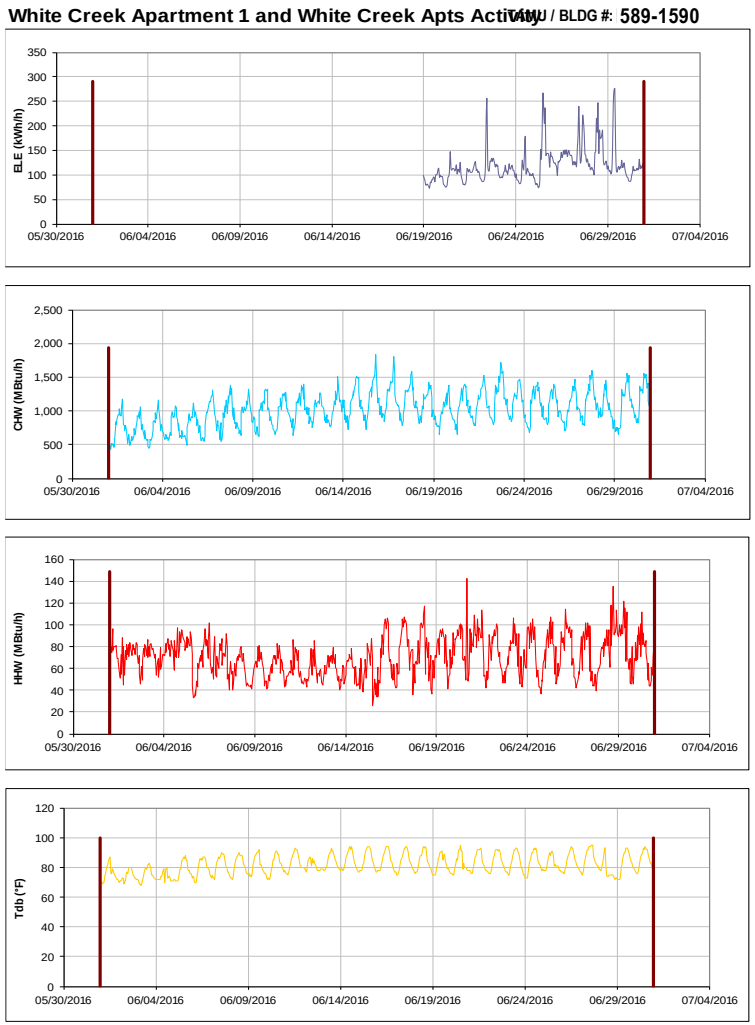


Figure III-169 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 1 and White Creek Apts Activity Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

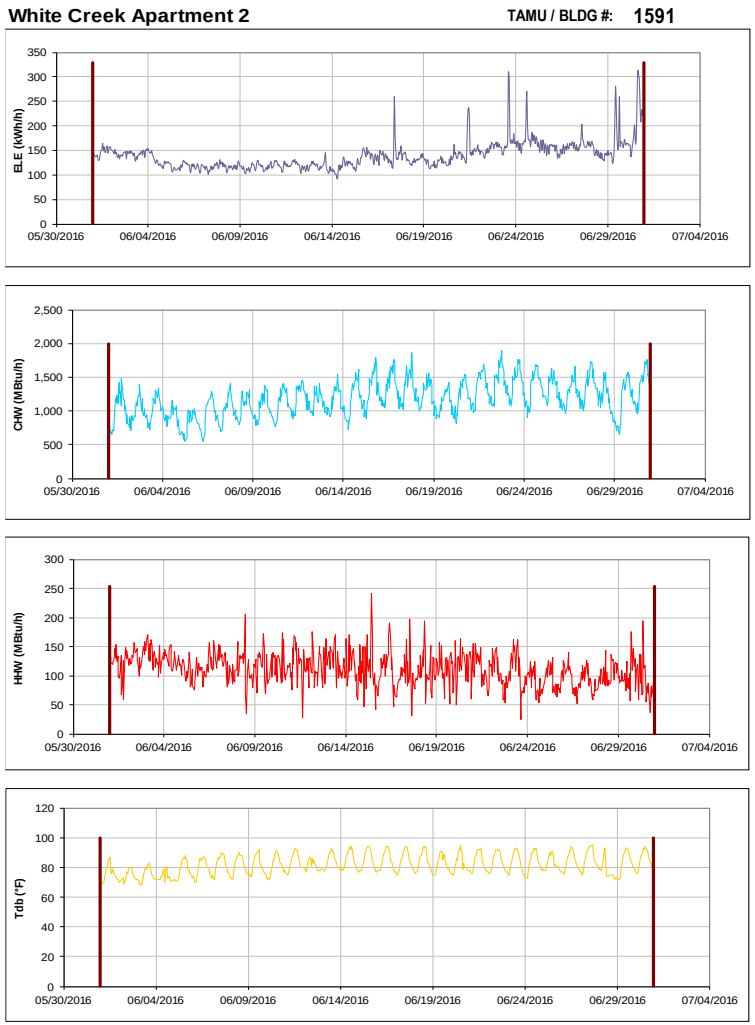


Figure III-170 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 2 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

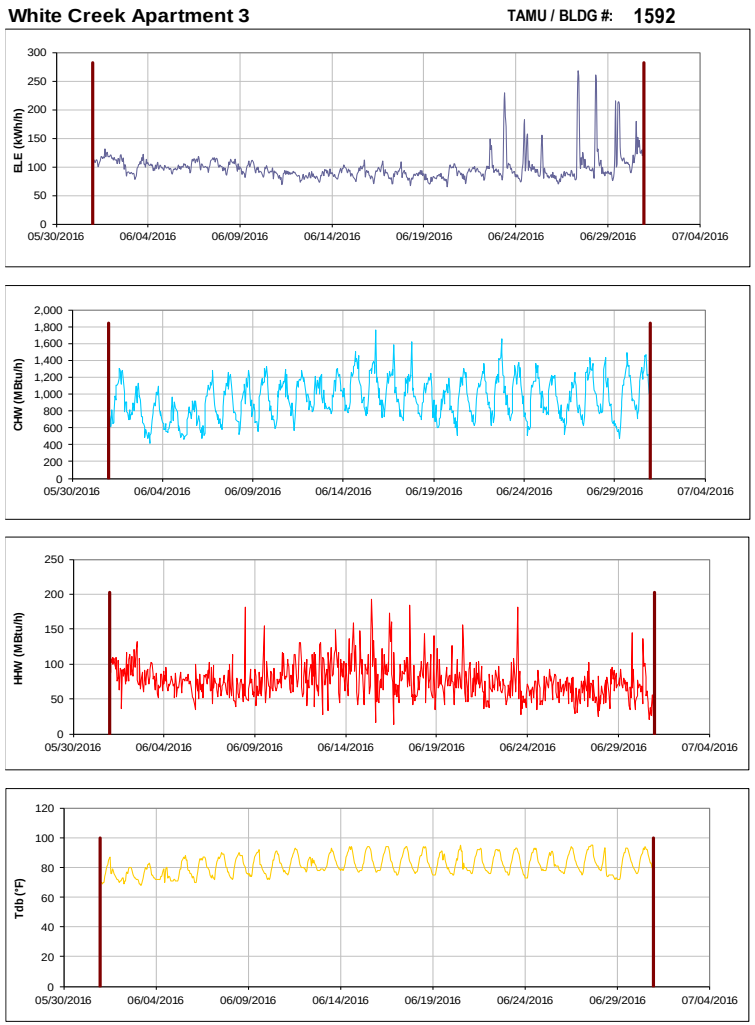


Figure III-171 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 3 during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

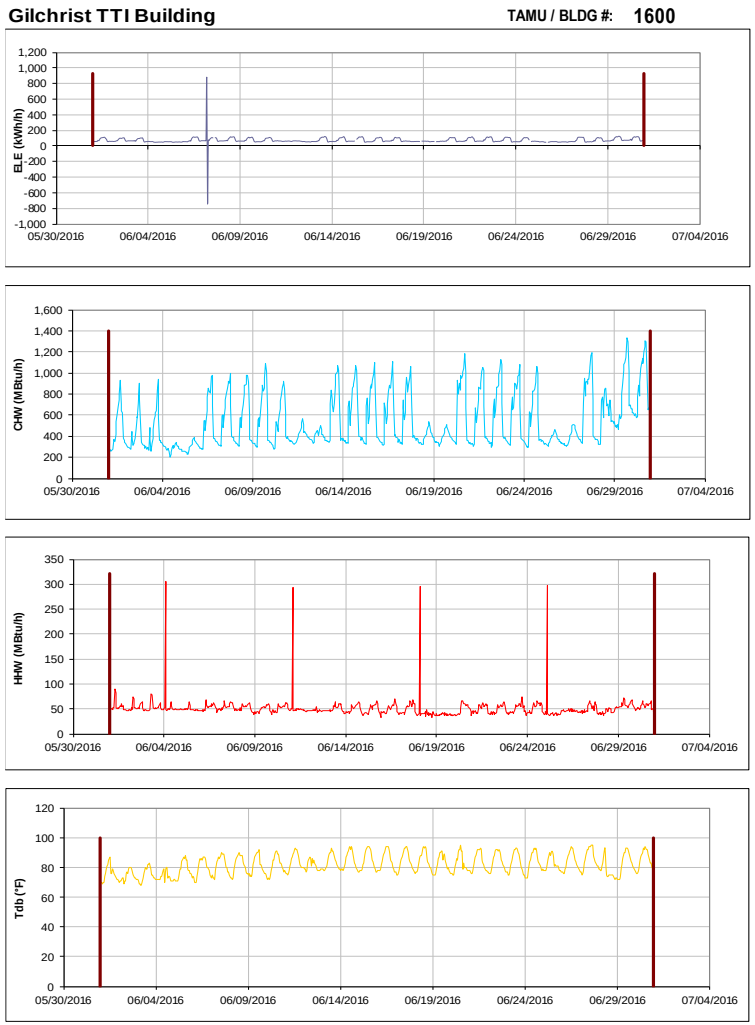


Figure III-172 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gilchrist TTI Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

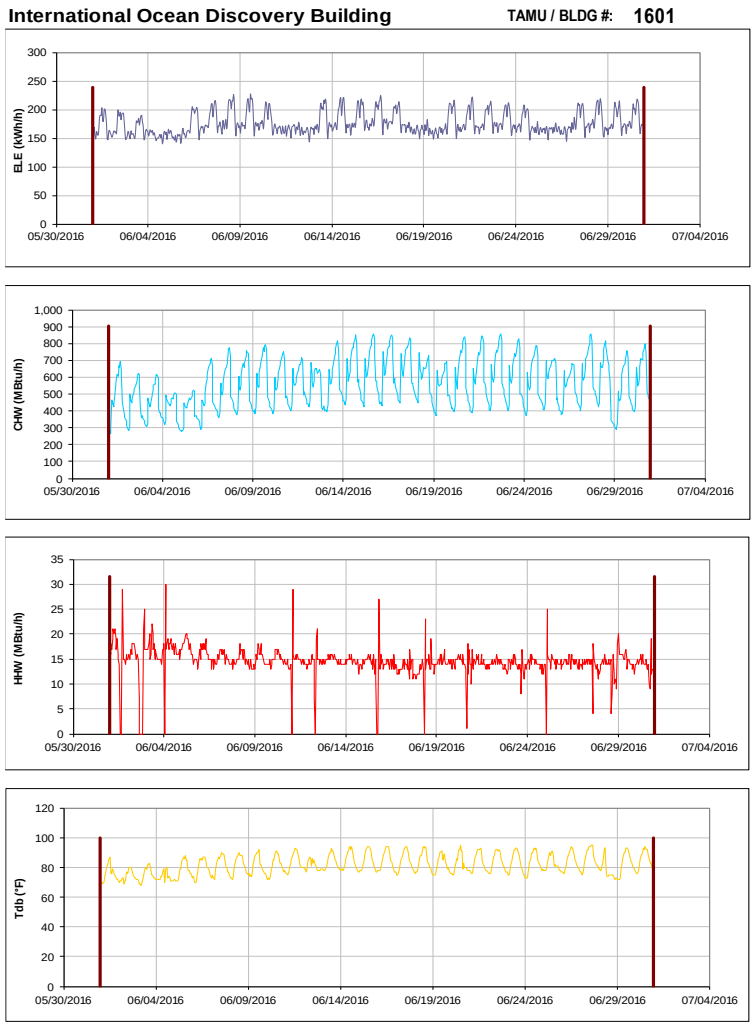


Figure III-173 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for International Ocean Discovery Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

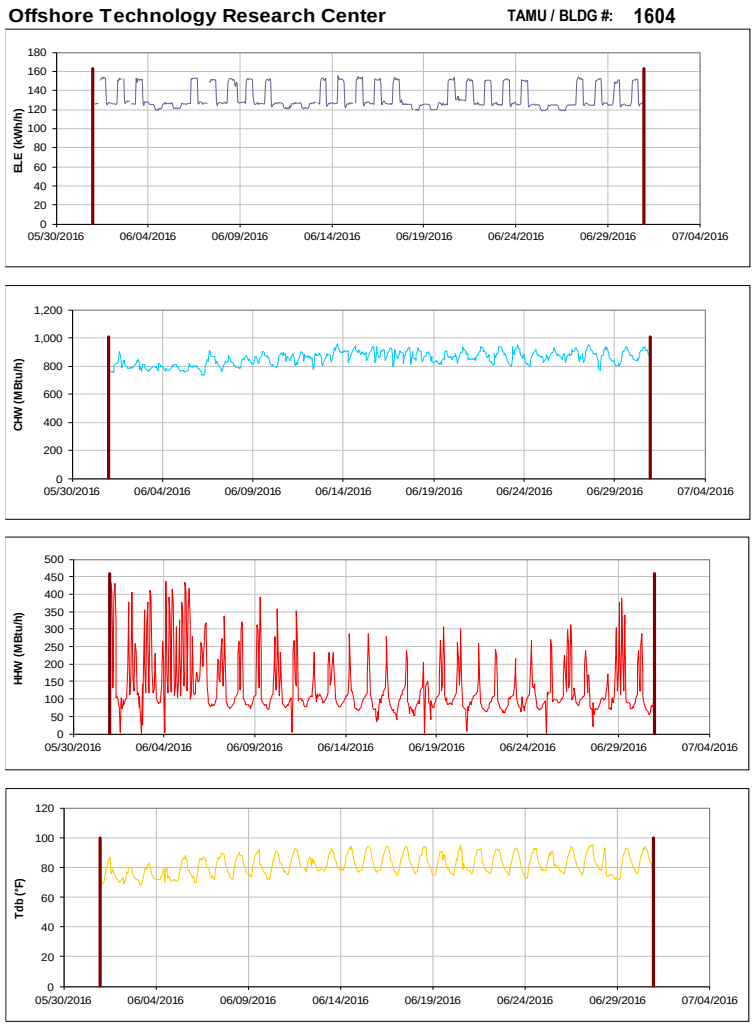


Figure III-174 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Offshore Technology Research Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

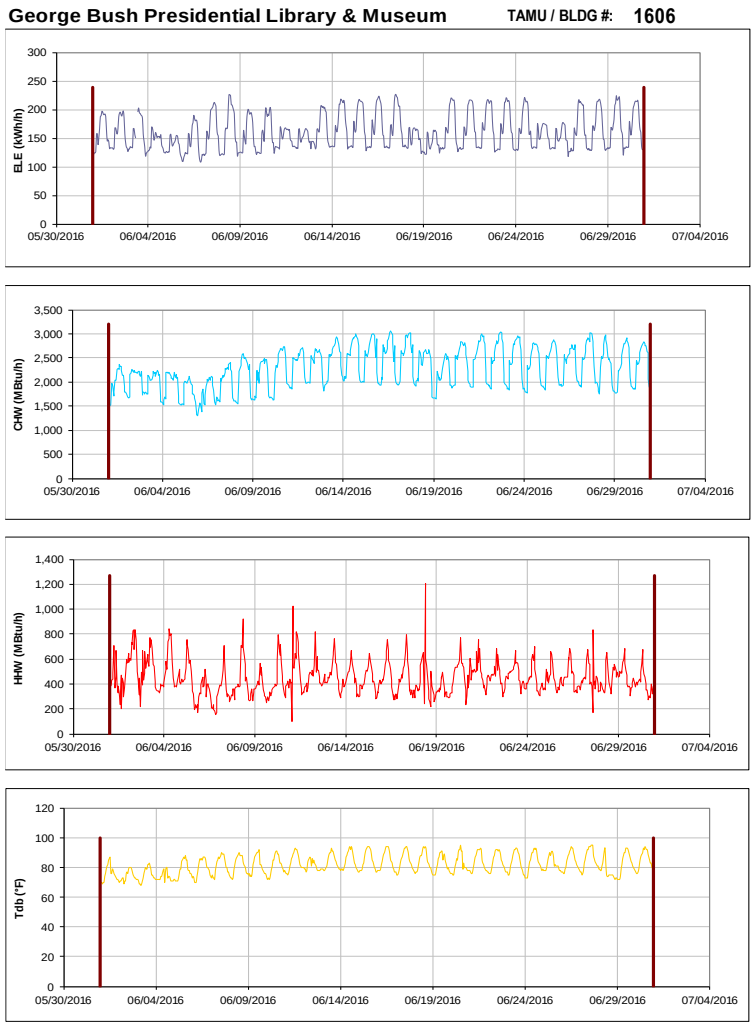


Figure III-175 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for George Bush Presidential Library & Museum during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

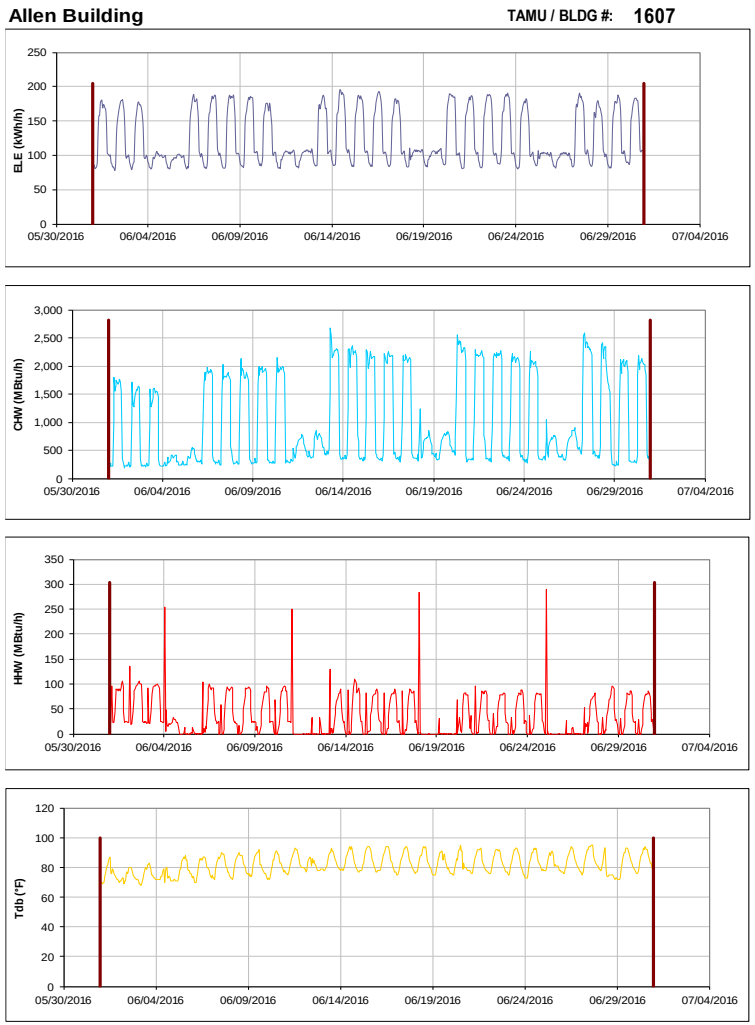


Figure III-176 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Allen Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

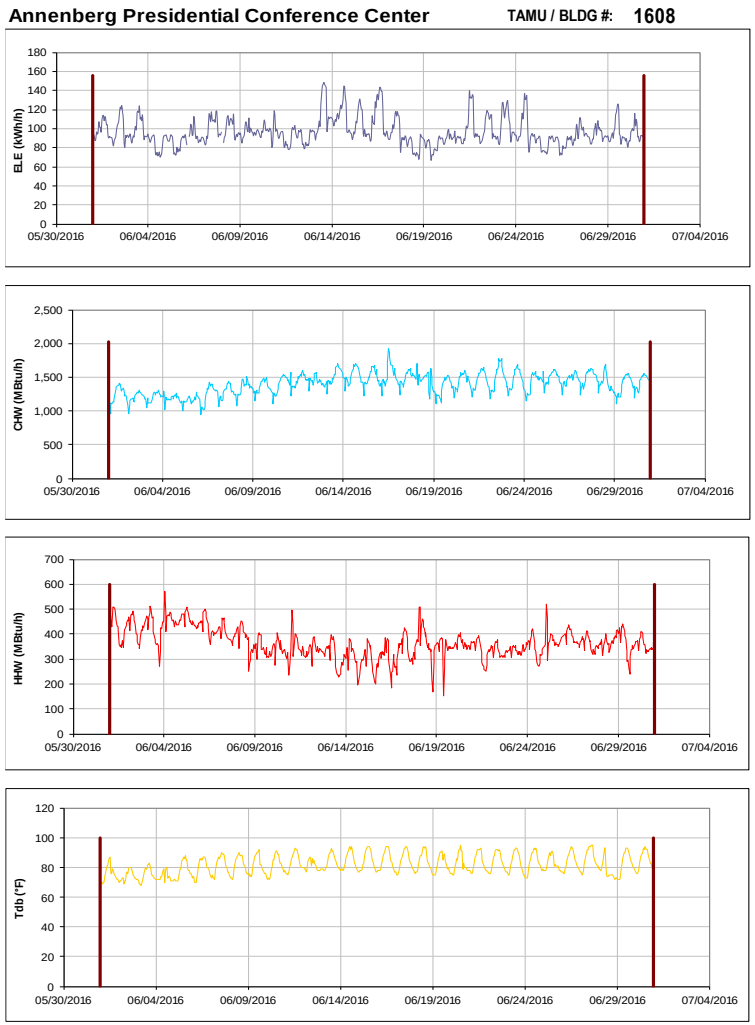


Figure III-177 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Annenberg Presidential Conference Center during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

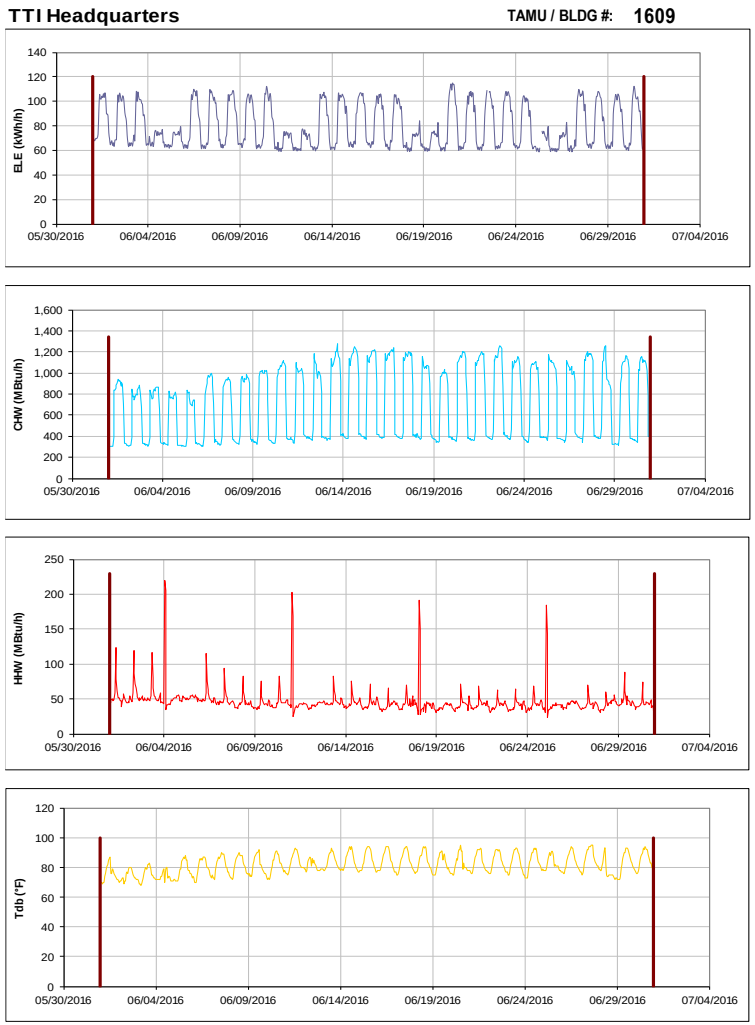


Figure III-178 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TTI Headquarters during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

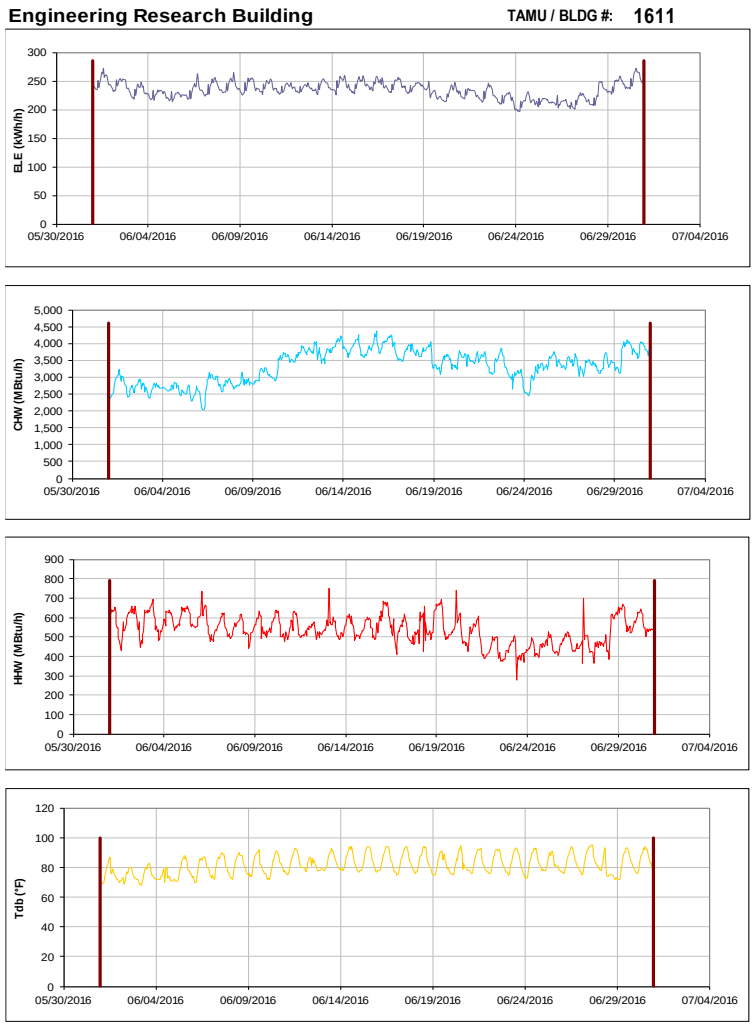


Figure III-179 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Research Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

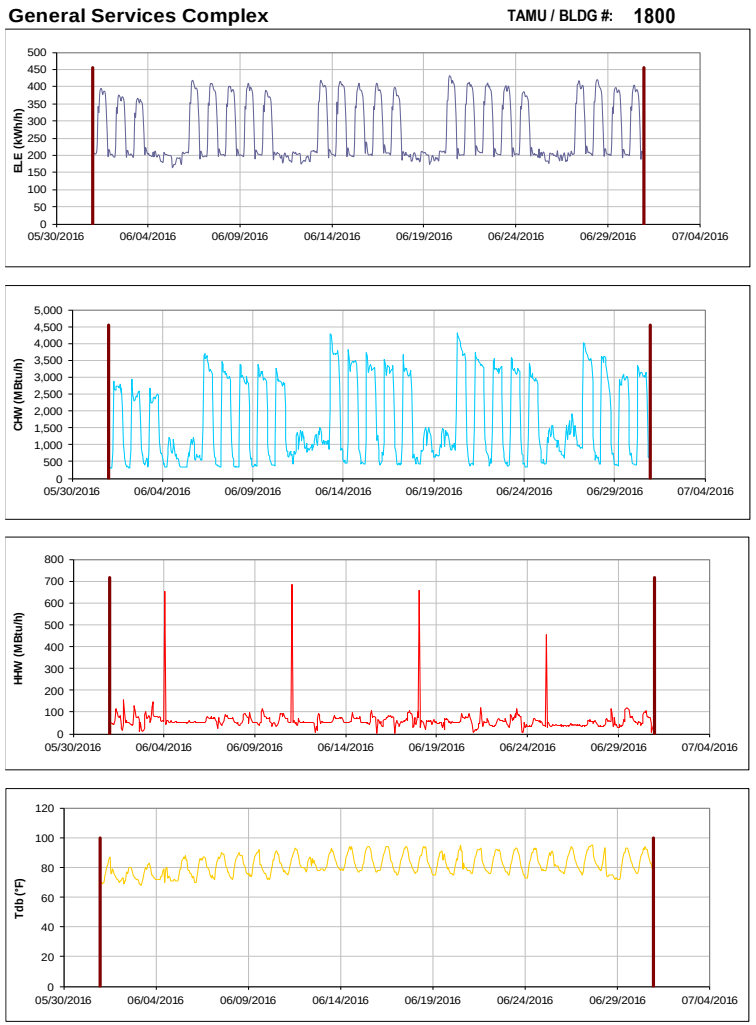


Figure III-180 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for General Services Complex during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

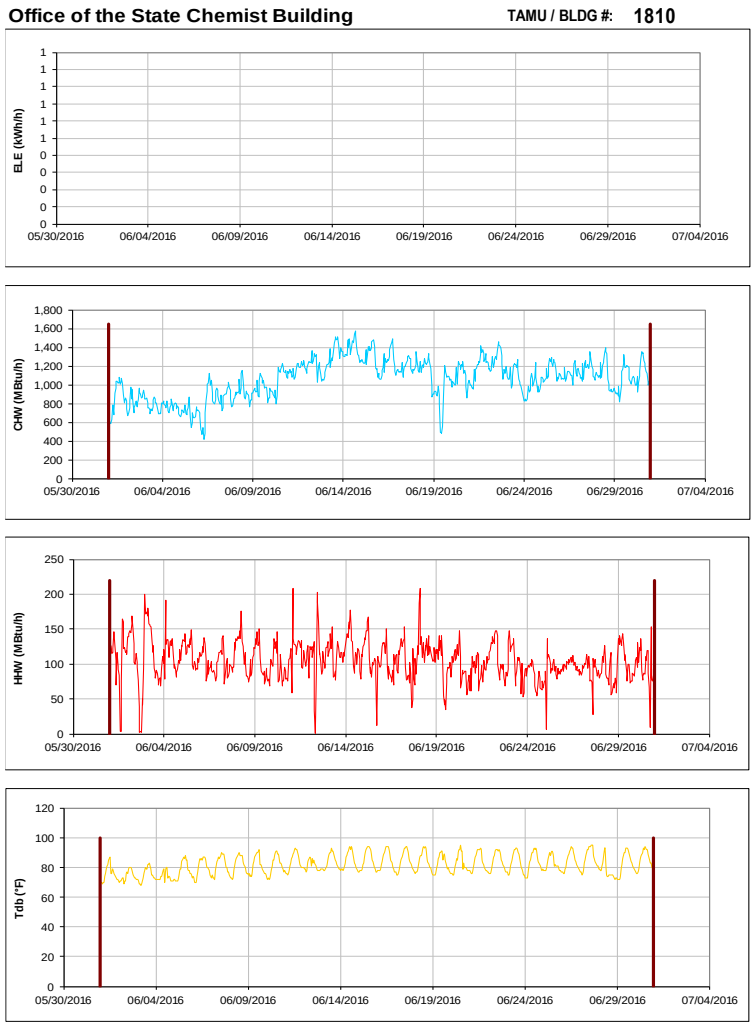


Figure III-181 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Office of the State Chemist Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

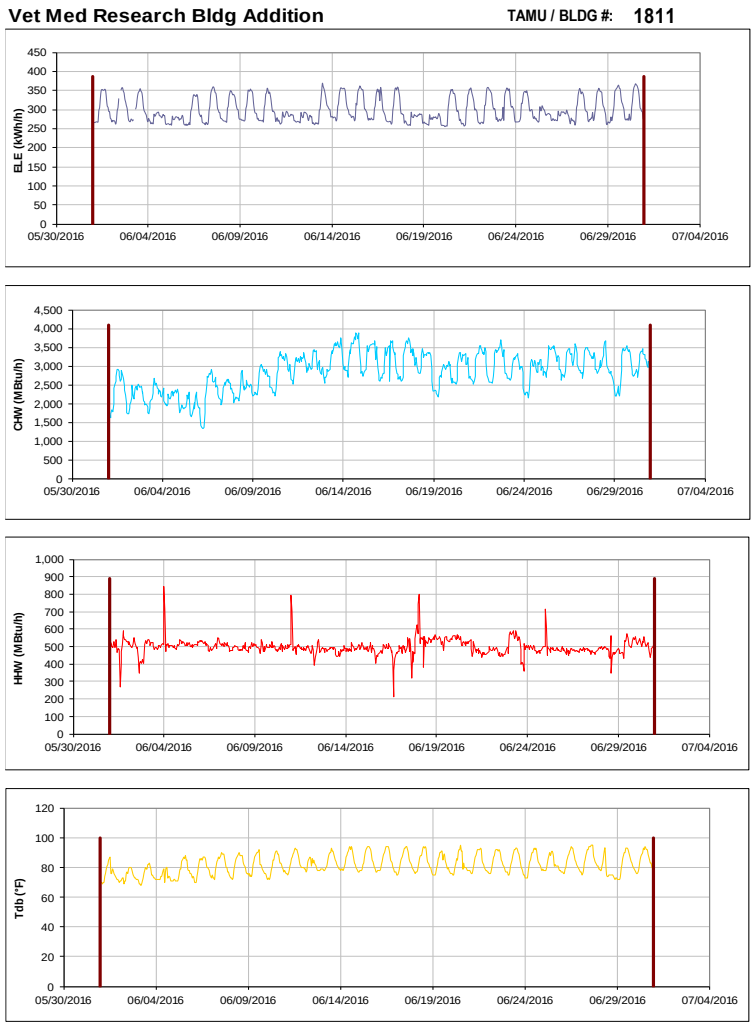


Figure III-182 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vet Med Research Bldg Addition during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

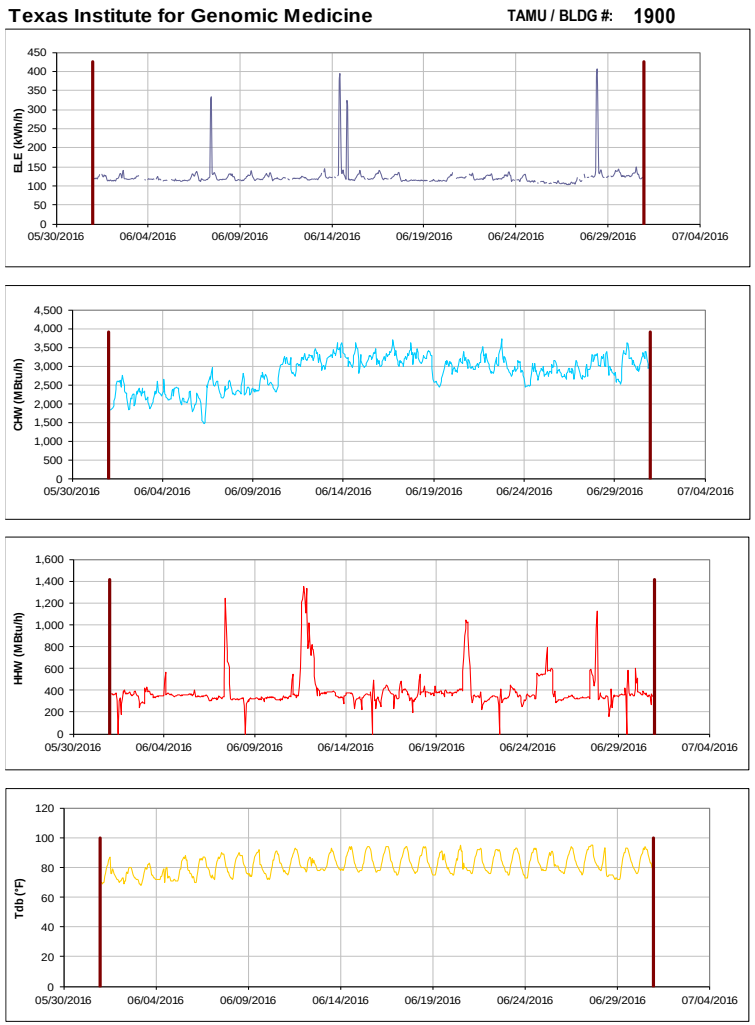


Figure III-183 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Institute for Genomic Medicine during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

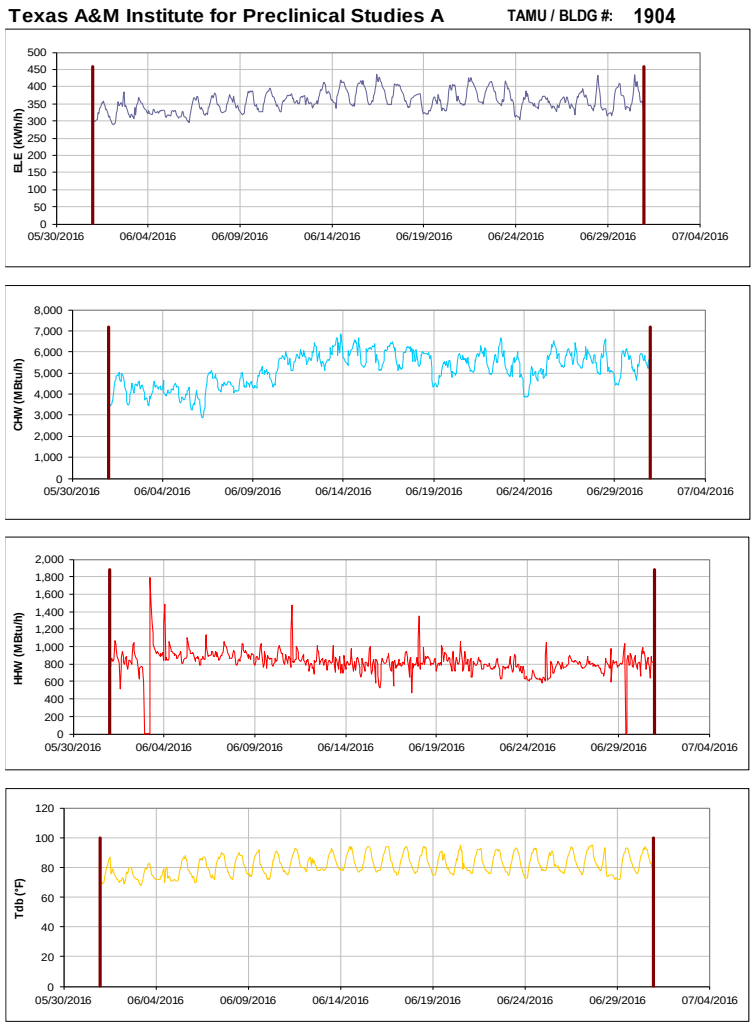


Figure III-184 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas A&M Institute for Preclinical Studies A during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

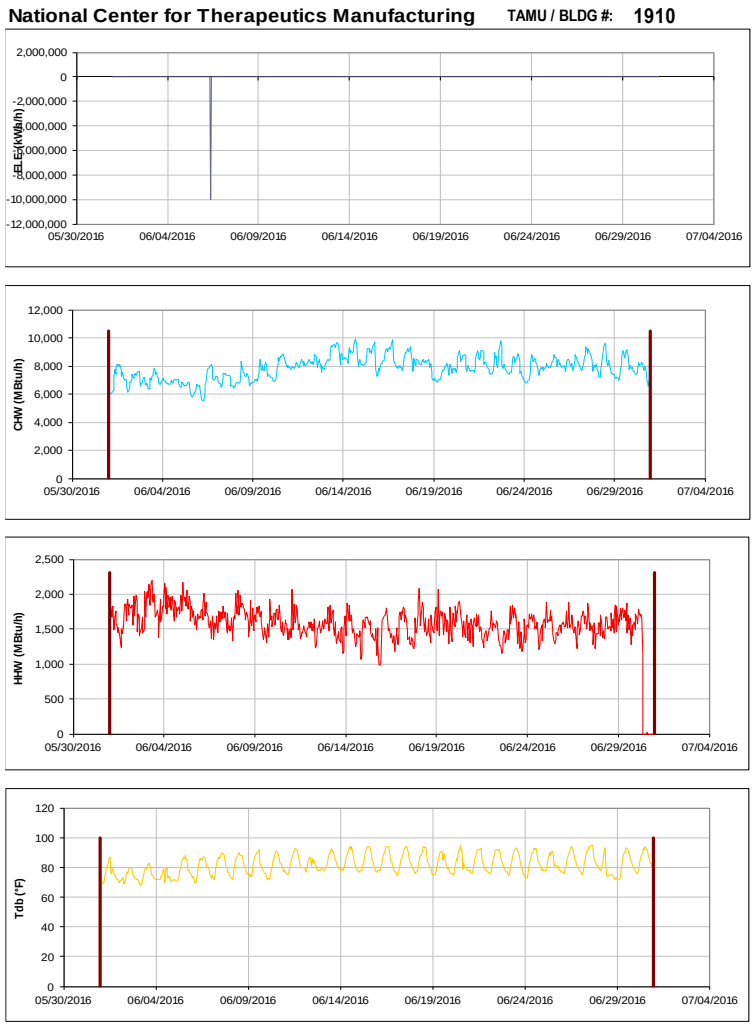


Figure III-185 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for National Center for Therapeutics Manufacturing during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

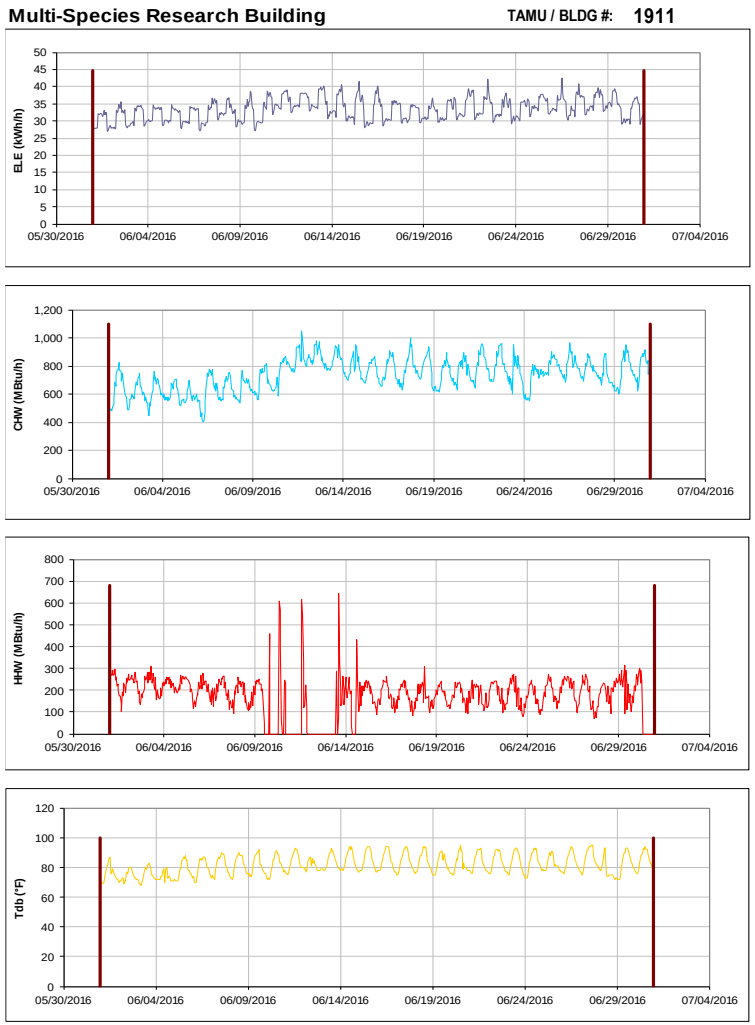


Figure III-186 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Multi-Species Research Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

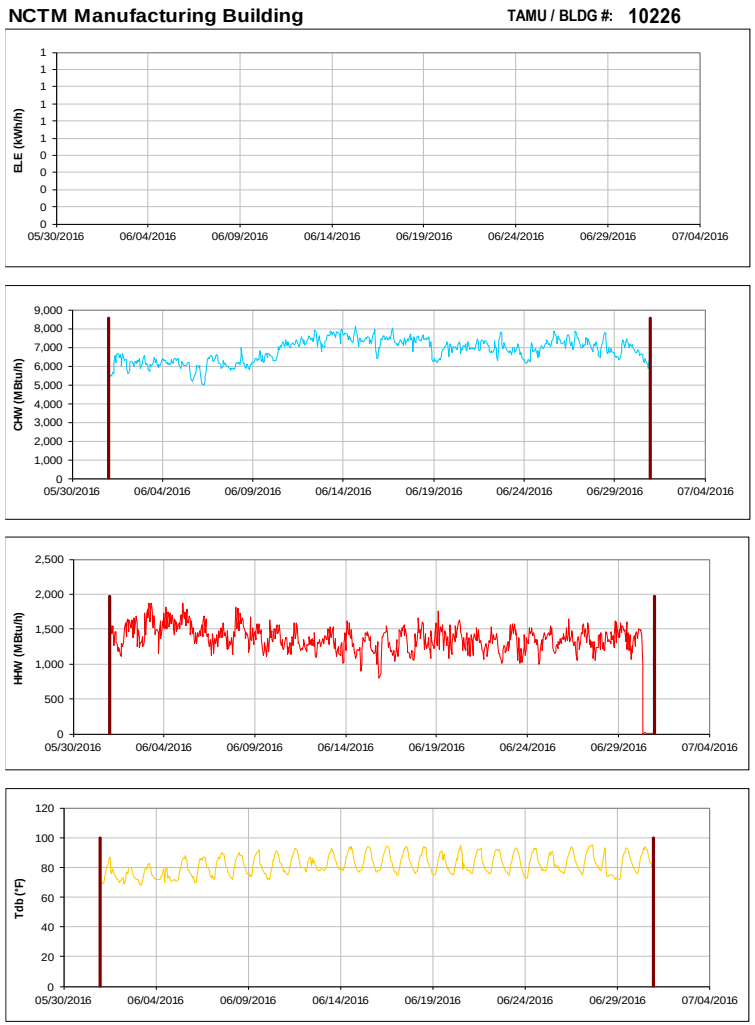


Figure III-187 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for NCTM Manufacturing Building during the Month of June 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

IV. Energy Balance Plots for June 2016 Consumption

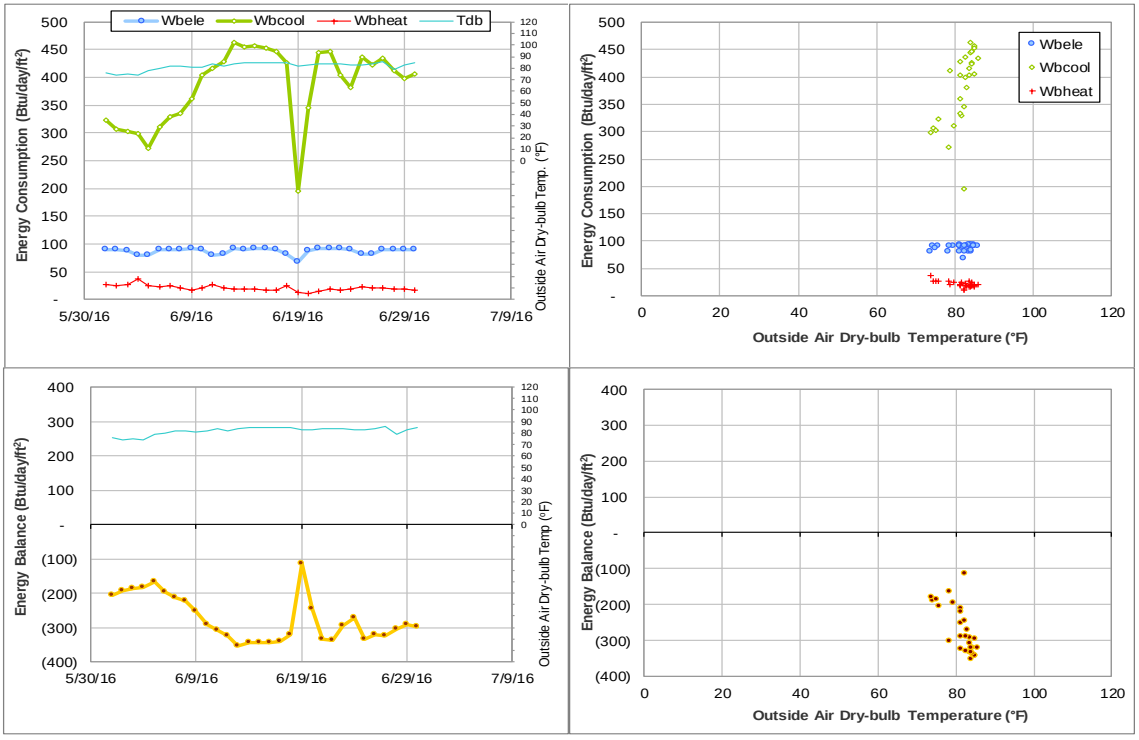


Figure IV-1 Emerging Technologies Building TAMU BLDG # 270 Energy Balance Plot during June 2016

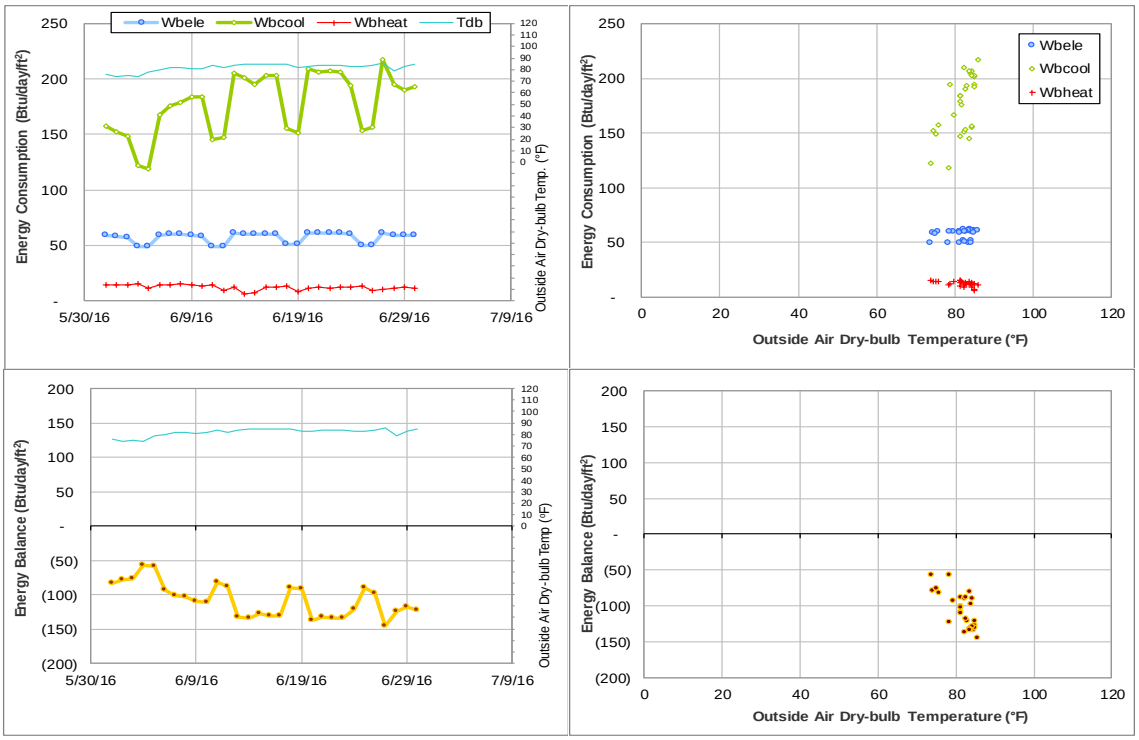


Figure IV-2 Liberal Arts and Arts & Humanities Building TAMU BLDG # 275 Energy Balance Plot during June 2016

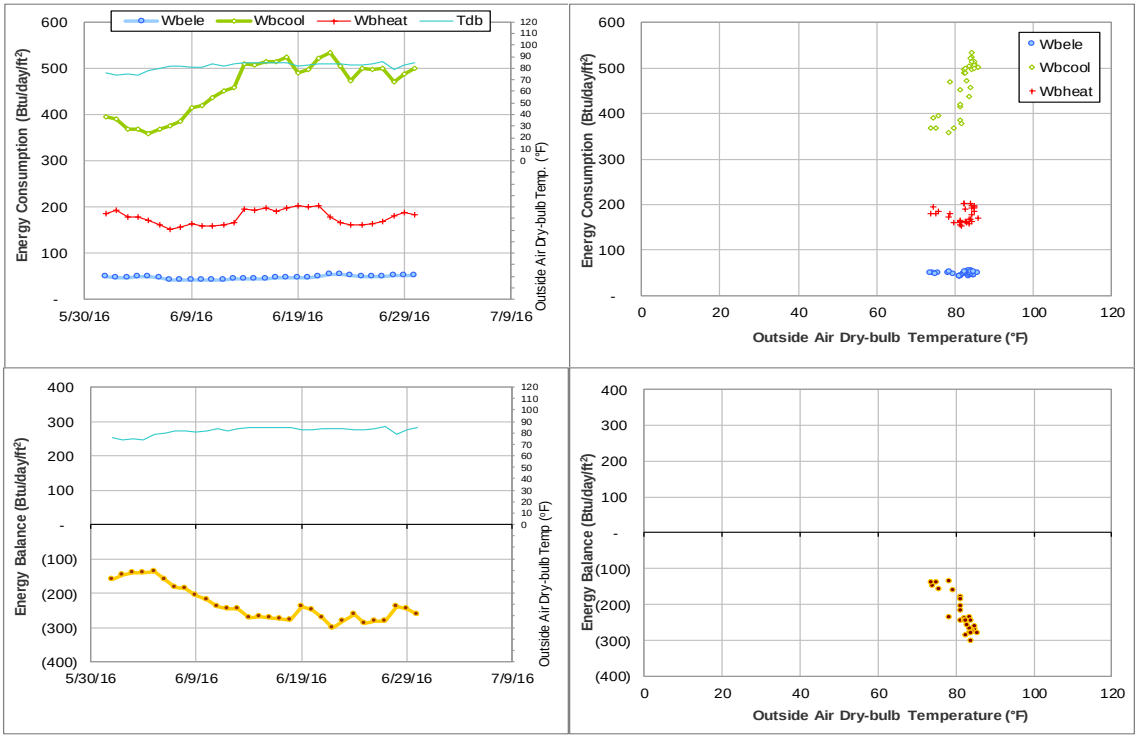


Figure IV-3 Wells Residence Hall TAMU BLDG # 290 Energy Balance Plot during June 2016

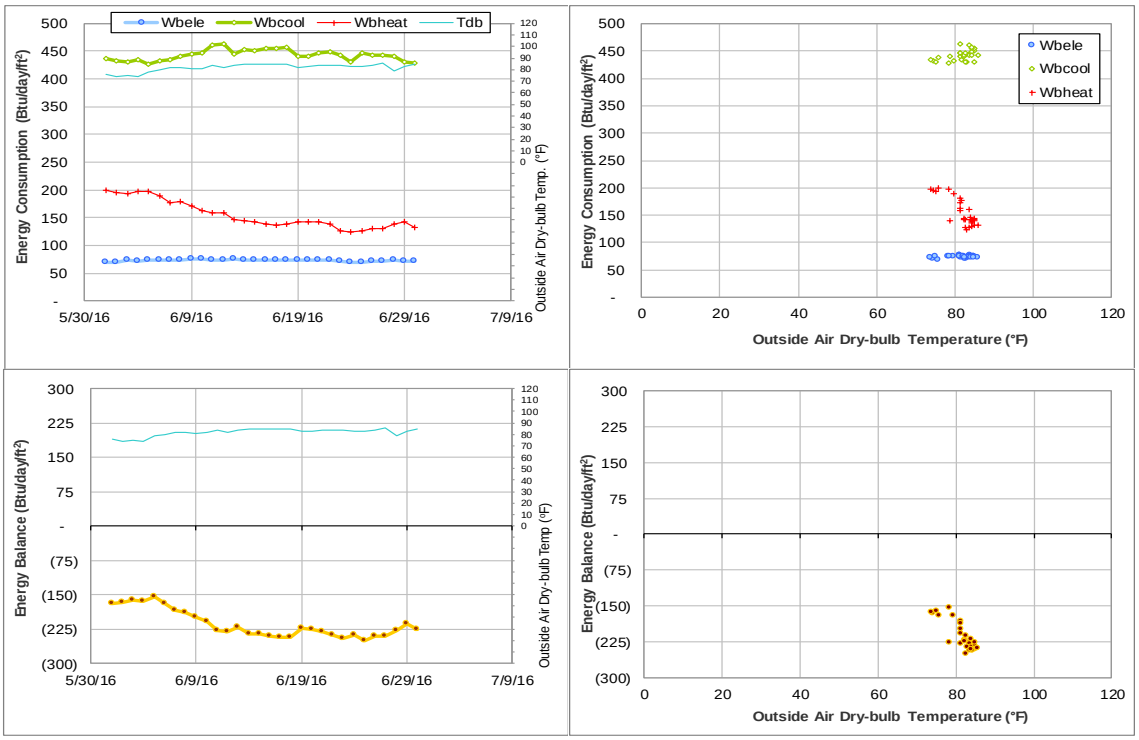


Figure IV-4 Rudder Residence Hall TAMU BLDG # 291 Energy Balance Plot during June 2016

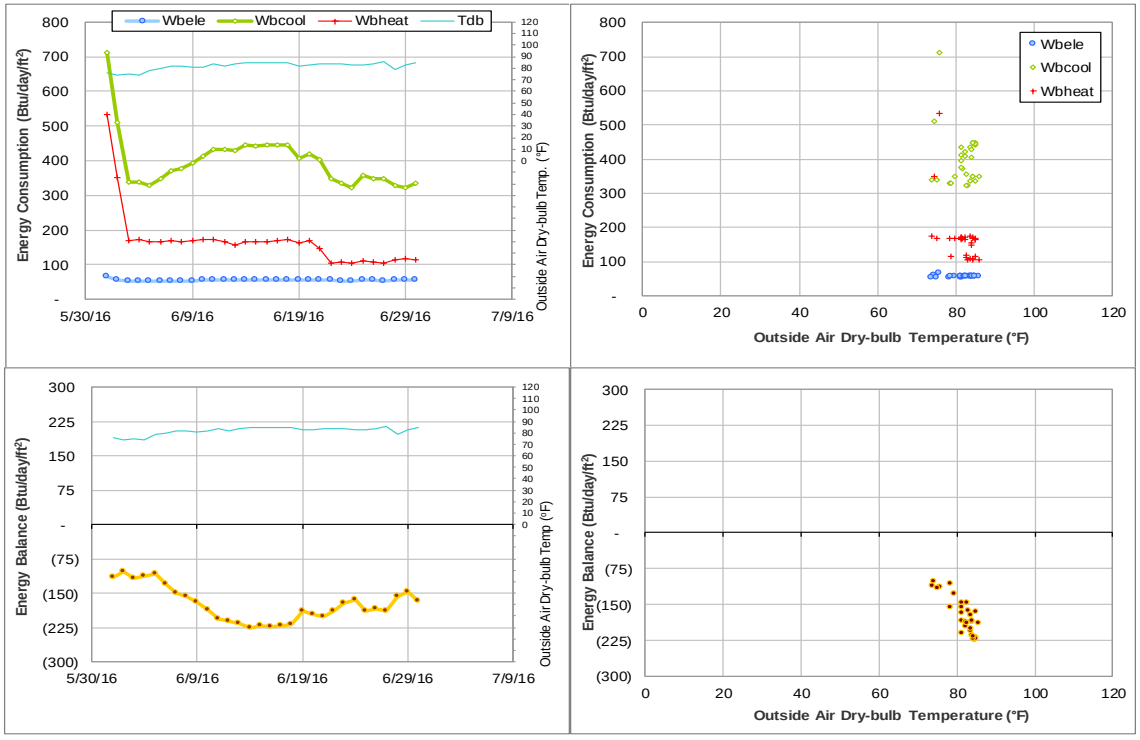


Figure IV-5 Eppright Residence Hall TAMU BLDG # 292 Energy Balance Plot during June 2016

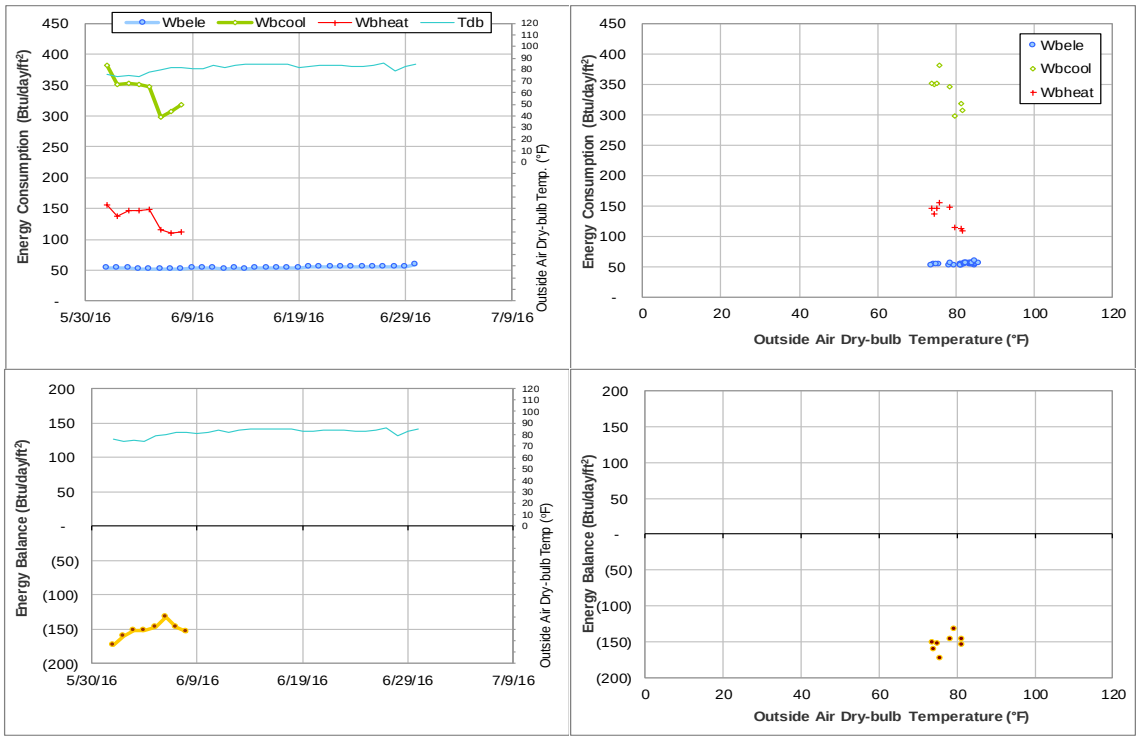


Figure IV-6 Appelt Residence Hall TAMU BLDG # 293 Energy Balance Plot during June 2016

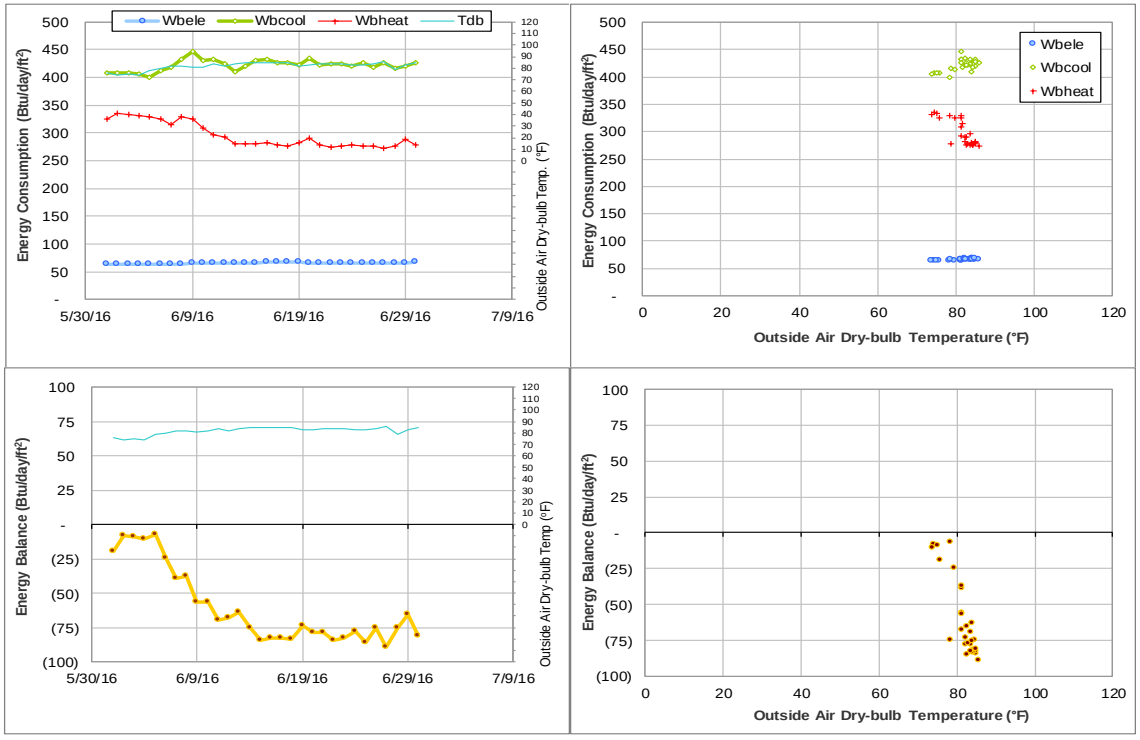


Figure IV-7 Lechner Residence Hall TAMU BLDG # 294 Energy Balance Plot during June 2016

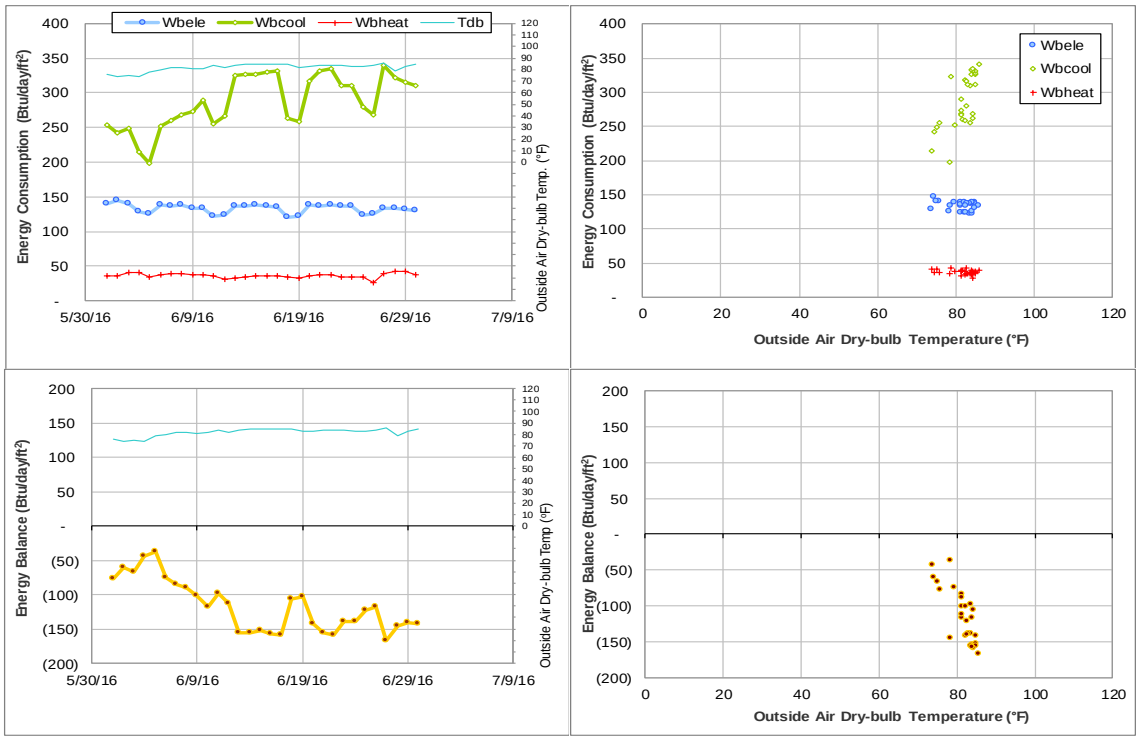


Figure IV-8 Mitchell Inst. for Fundamental Phys & Astronomy TAMU BLDG # 296 Energy Balance Plot during June 2016

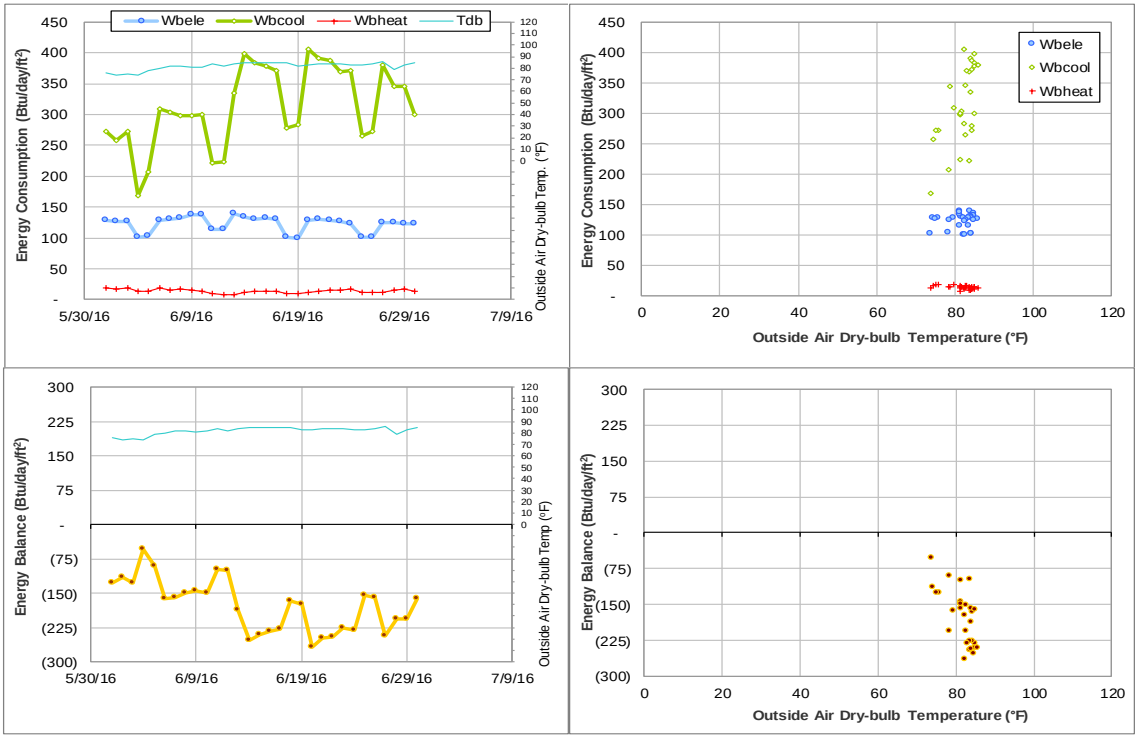


Figure IV-9 CE TTI Office & Lab Building TAMU BLDG # 325 Energy Balance Plot during June 2016

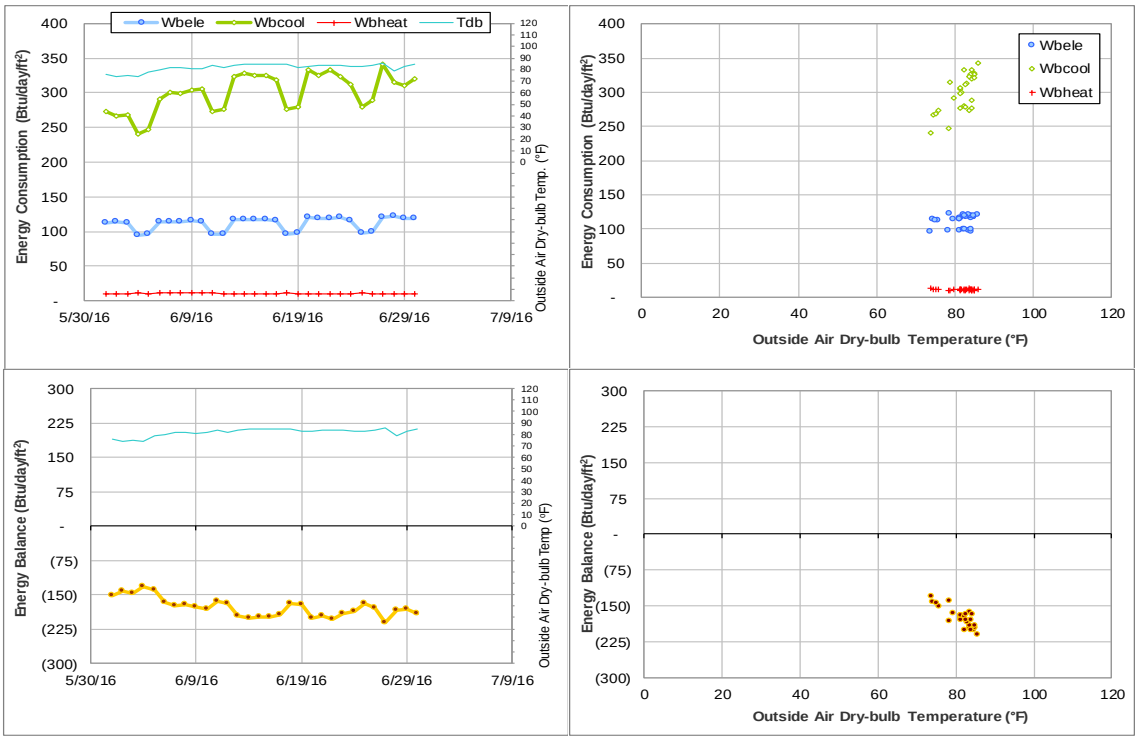


Figure IV-10 Bright Aerospace Building TAMU BLDG # 353 Energy Balance Plot during June 2016

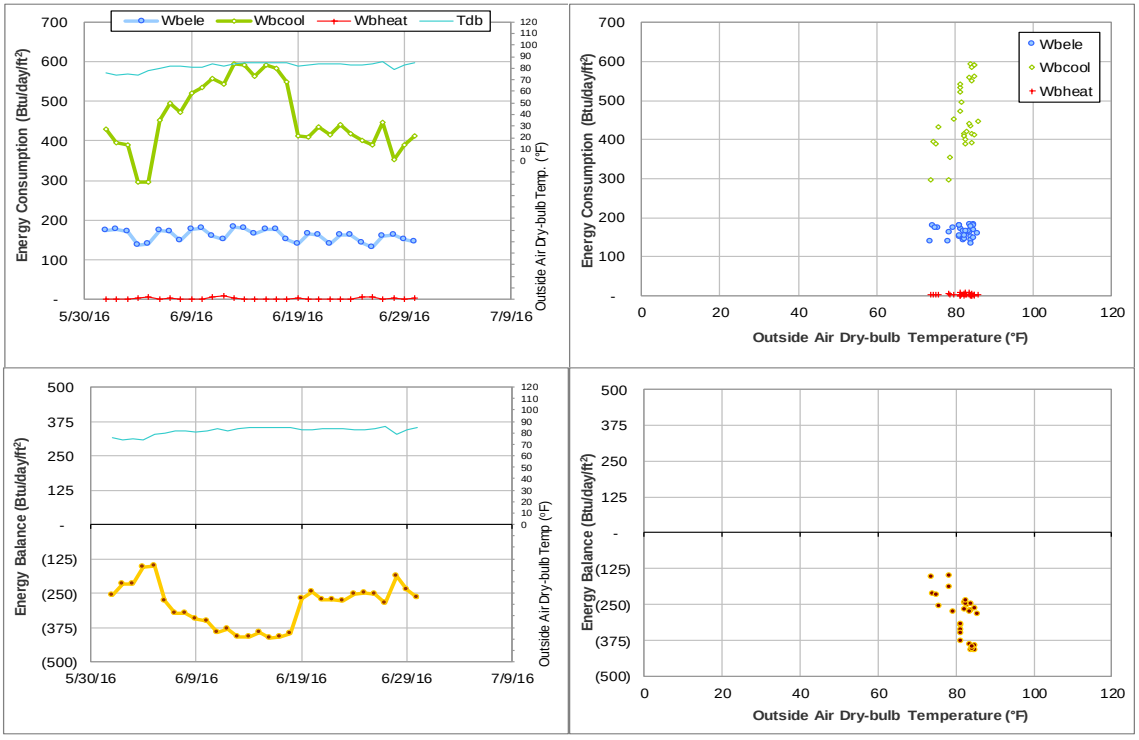


Figure IV-11 Davis Football Player Development Center TAMU BLDG # 358 Energy Balance Plot during June 2016

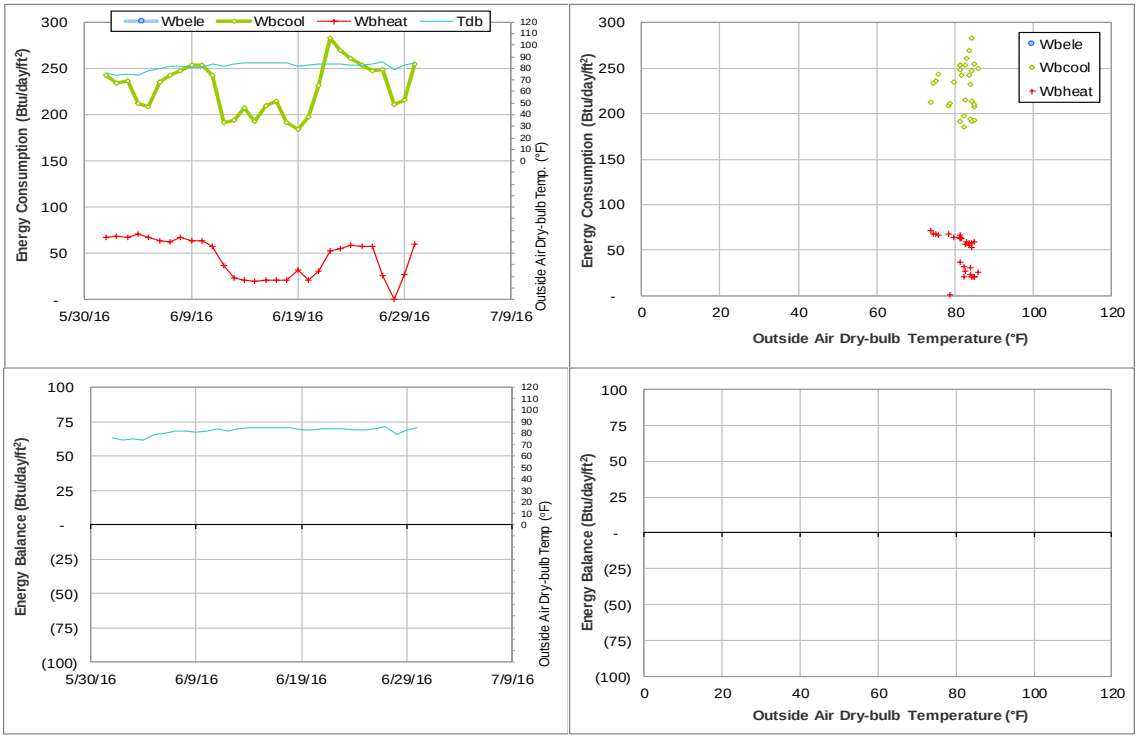


Figure IV-12 Architecture Building B&C TAMU BLDG # 359 and 432 Energy Balance Plot during June 2016

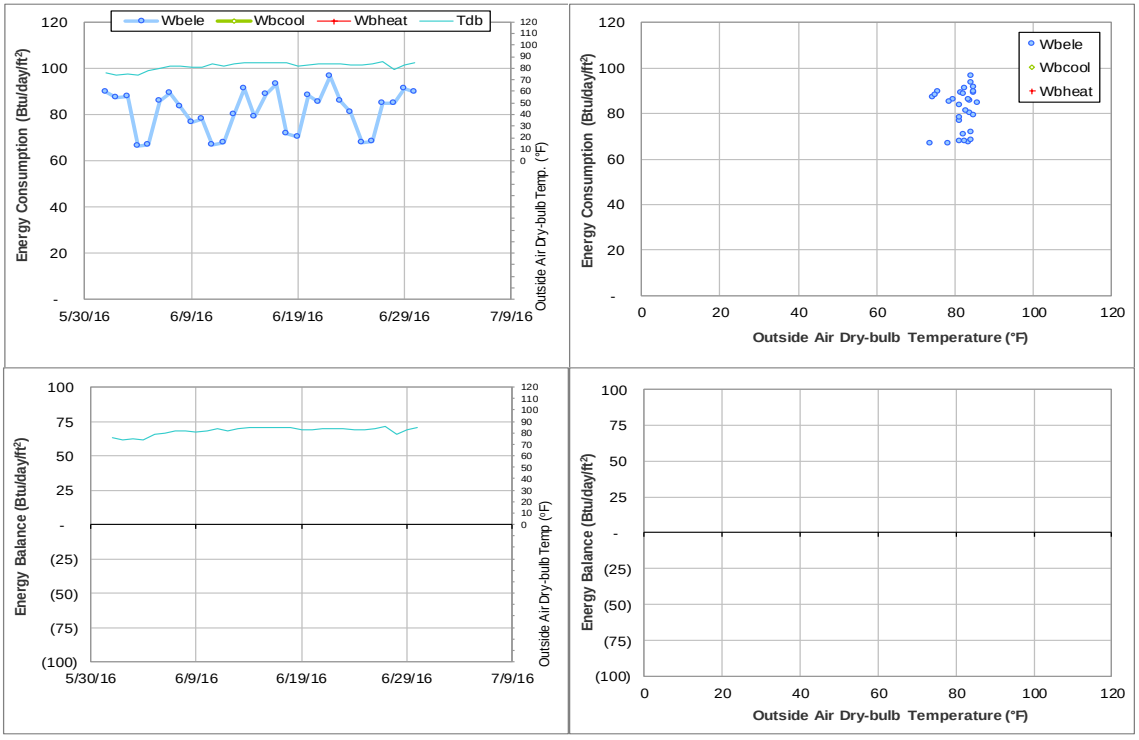


Figure IV-13 Architecture Building B TAMU BLDG # 359 Energy Balance Plot during June 2016

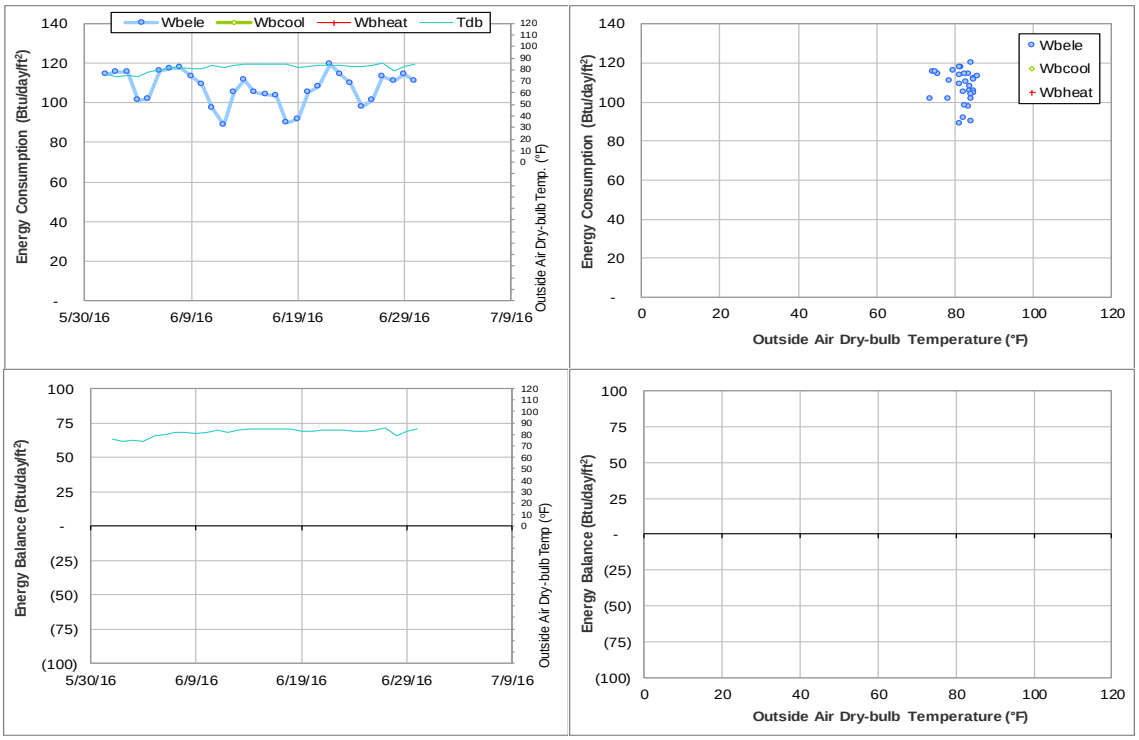


Figure IV-14 Architecture Building C TAMU BLDG # 432 Energy Balance Plot during June 2016

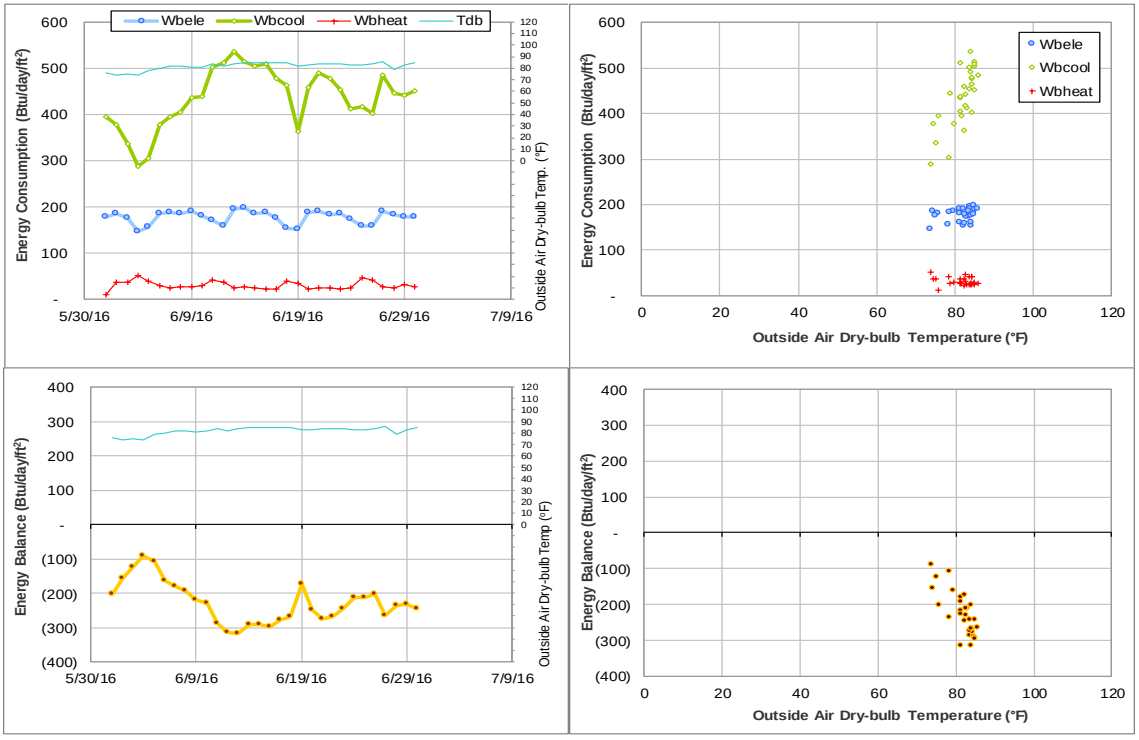


Figure IV-15 Bright Football Complex TAMU BLDG # 361 Energy Balance Plot during June 2016

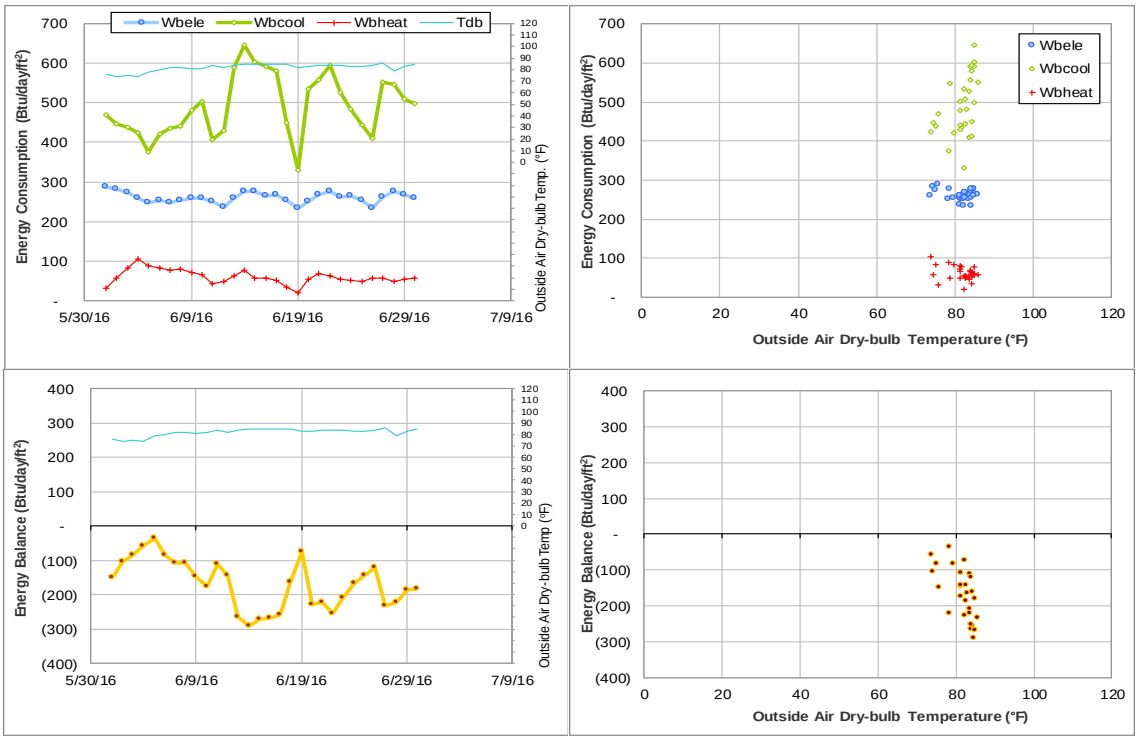


Figure IV-16 Kyle Field TAMU BLDG # 367 Energy Balance Plot during June 2016

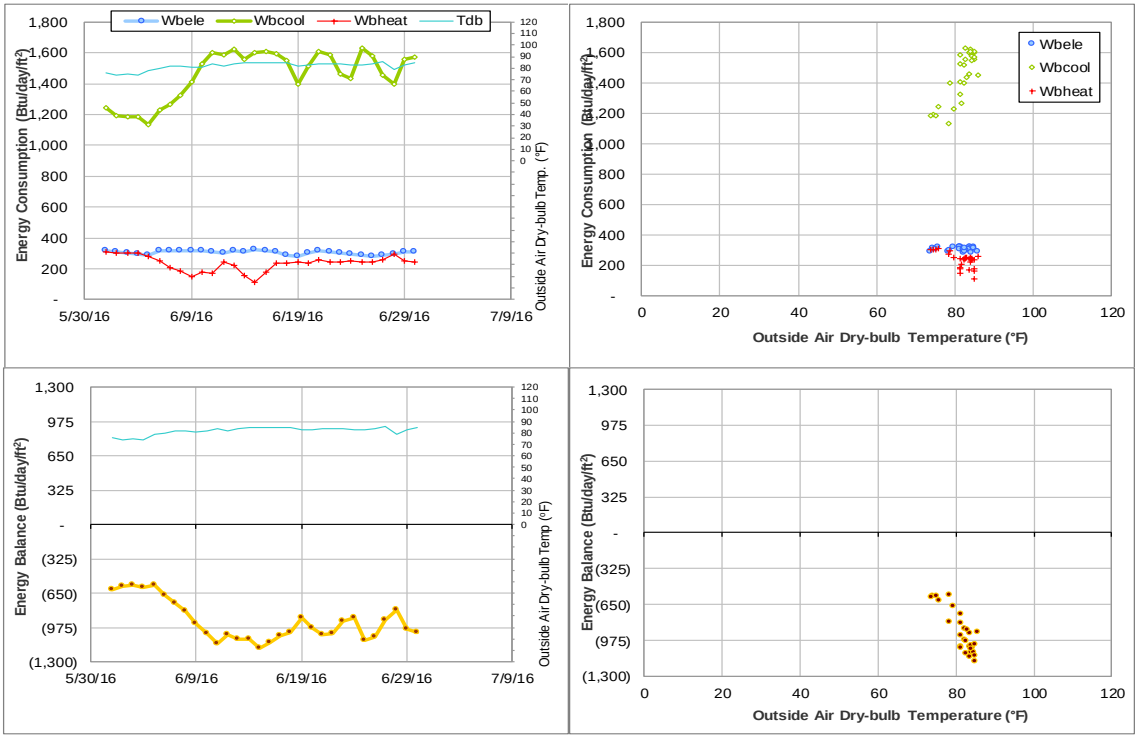


Figure IV-17 Chemistry Building Addition TAMU BLDG # 376 Energy Balance Plot during June 2016

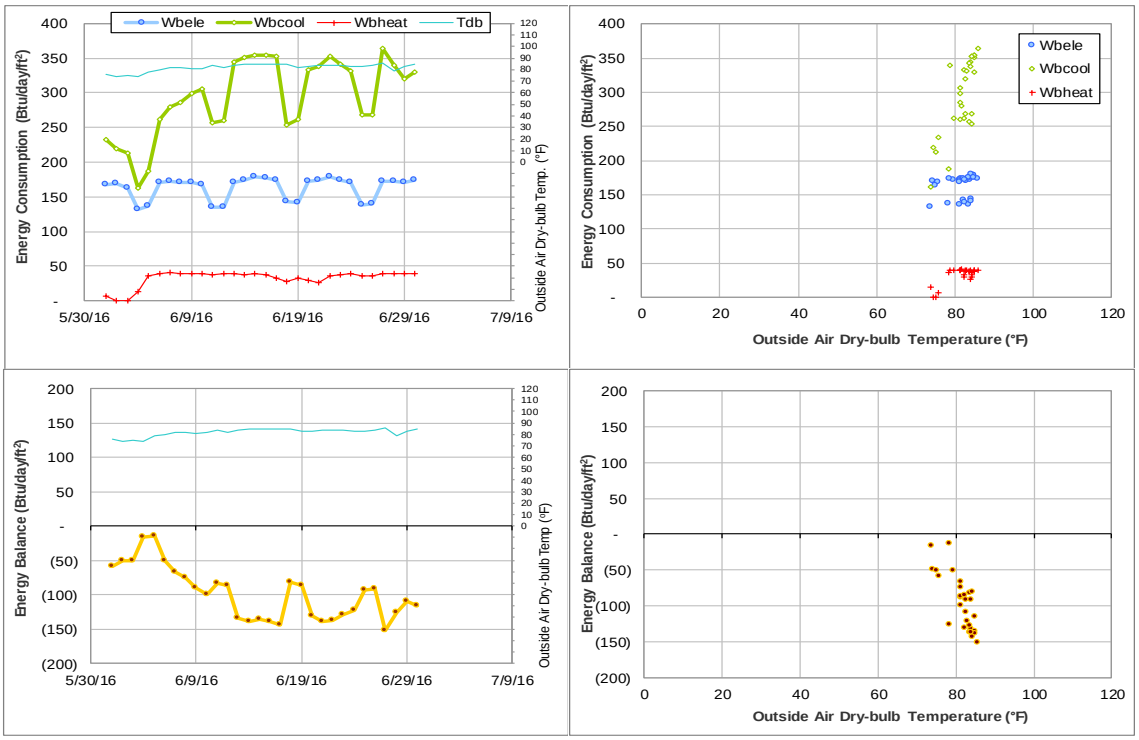


Figure IV-18 Koldus Building TAMU BLDG # 383 Energy Balance Plot during June 2016

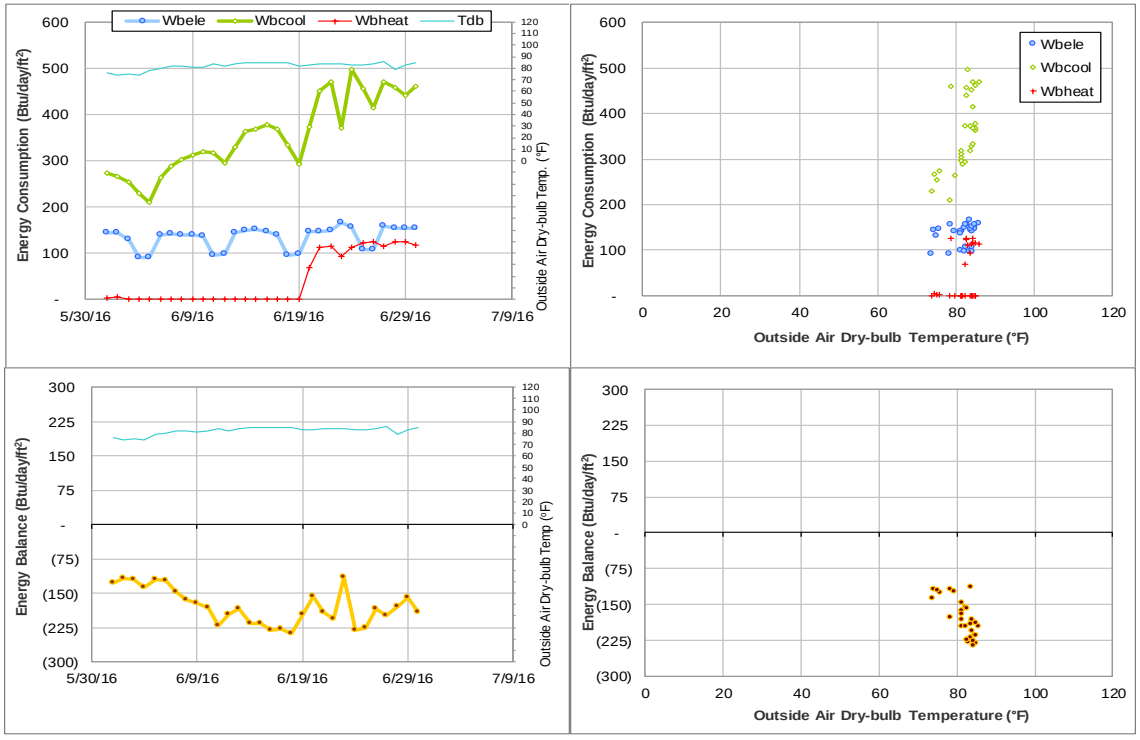


Figure IV-19 Sanders Corps of Cadets Center TAMU BLDG # 384 Energy Balance Plot during June 2016

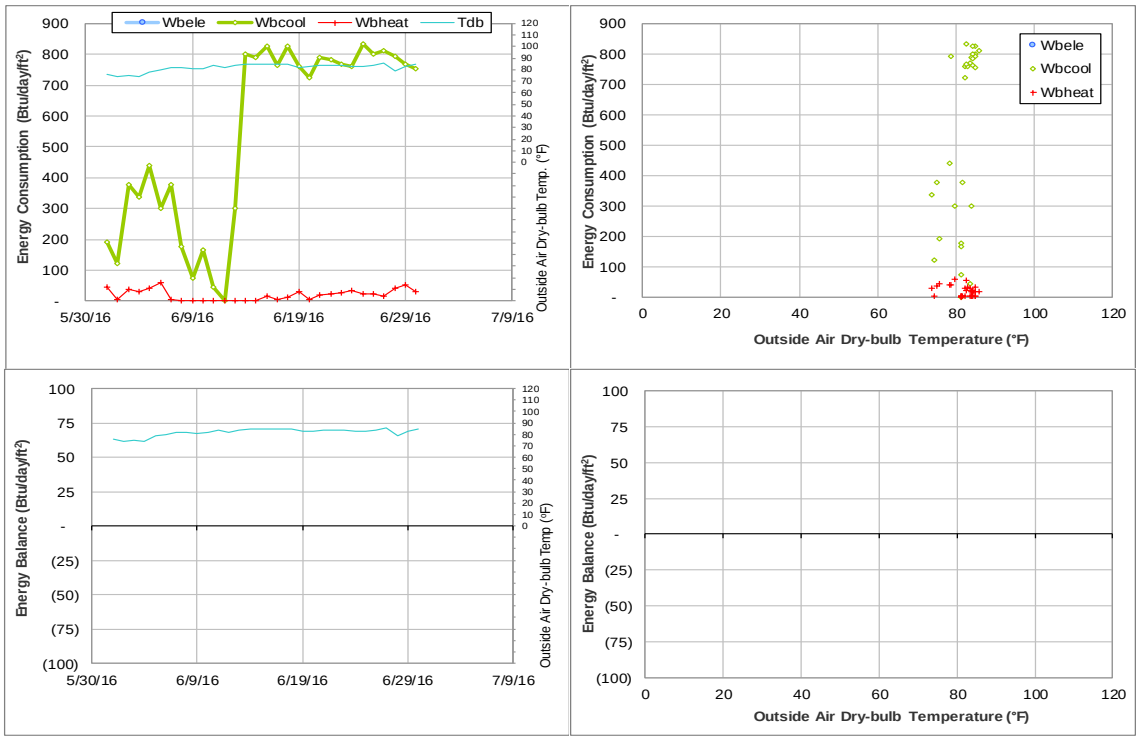


Figure IV-20 CE TTI Office & Lab Building - Pi R Square TAMU BLDG # 385 Energy Balance Plot during June 2016

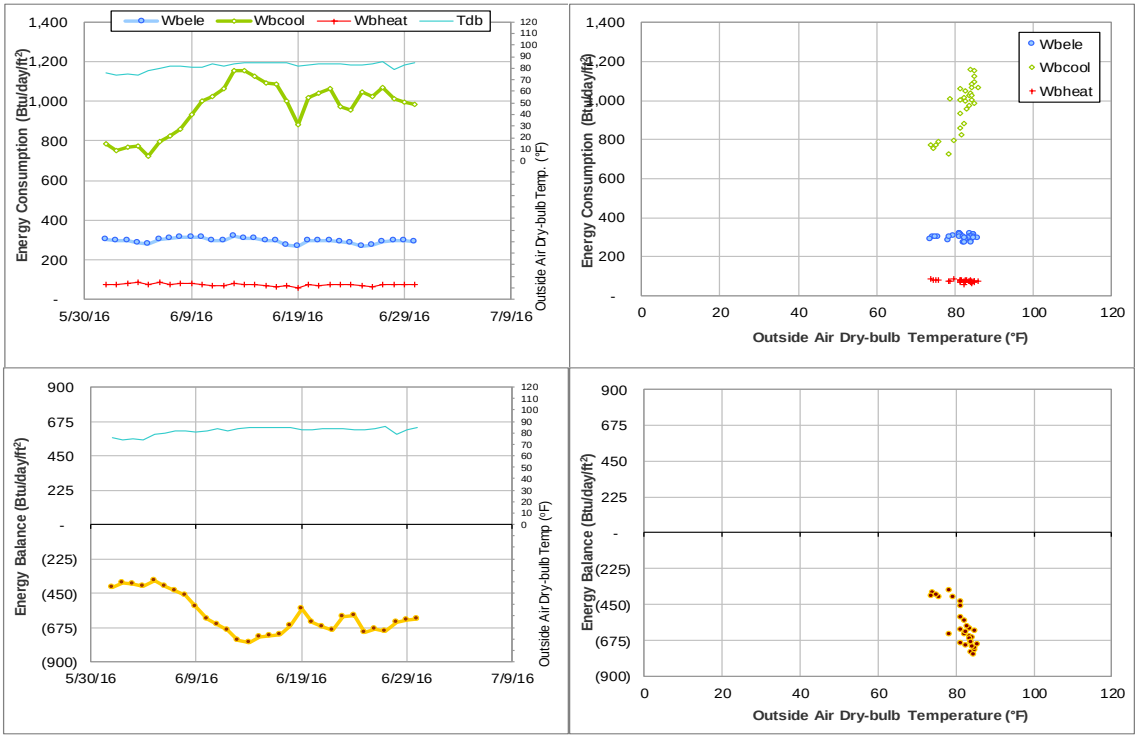


Figure IV-21 Jack E. Brown Chemical Engineering Building TAMU BLDG # 386 Energy Balance Plot during June 2016

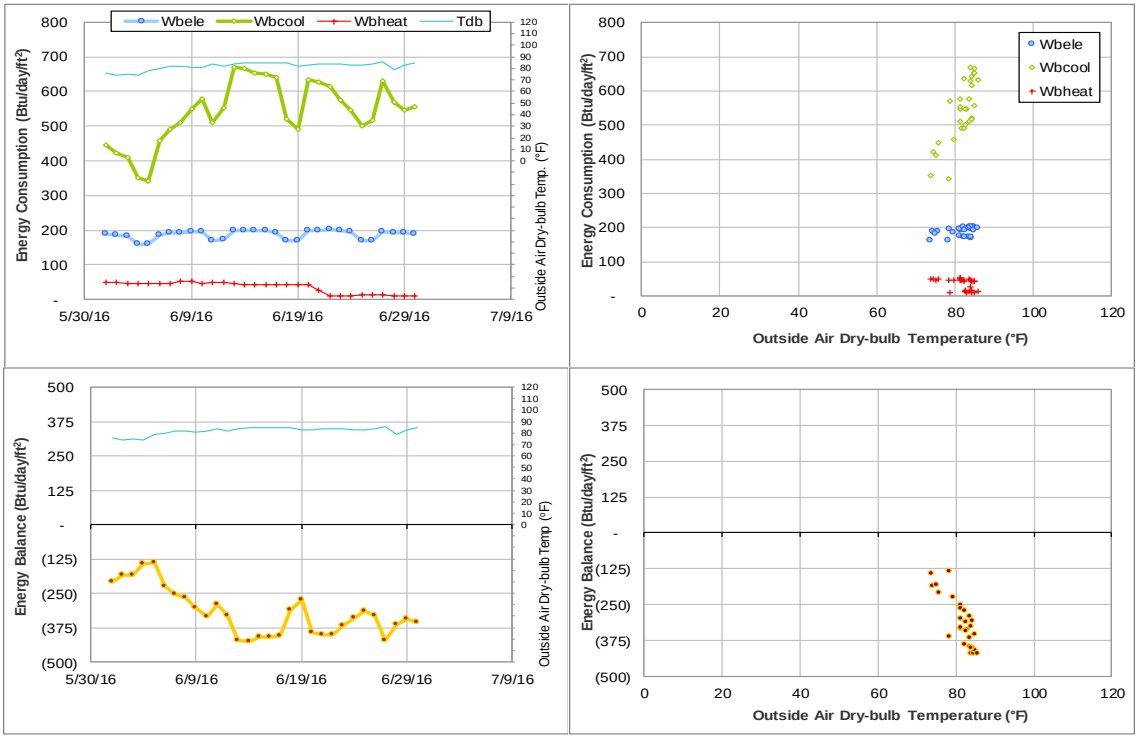


Figure IV-22 Richardson Petroleum Engineering Building TAMU BLDG # 387 Energy Balance Plot during June 2016

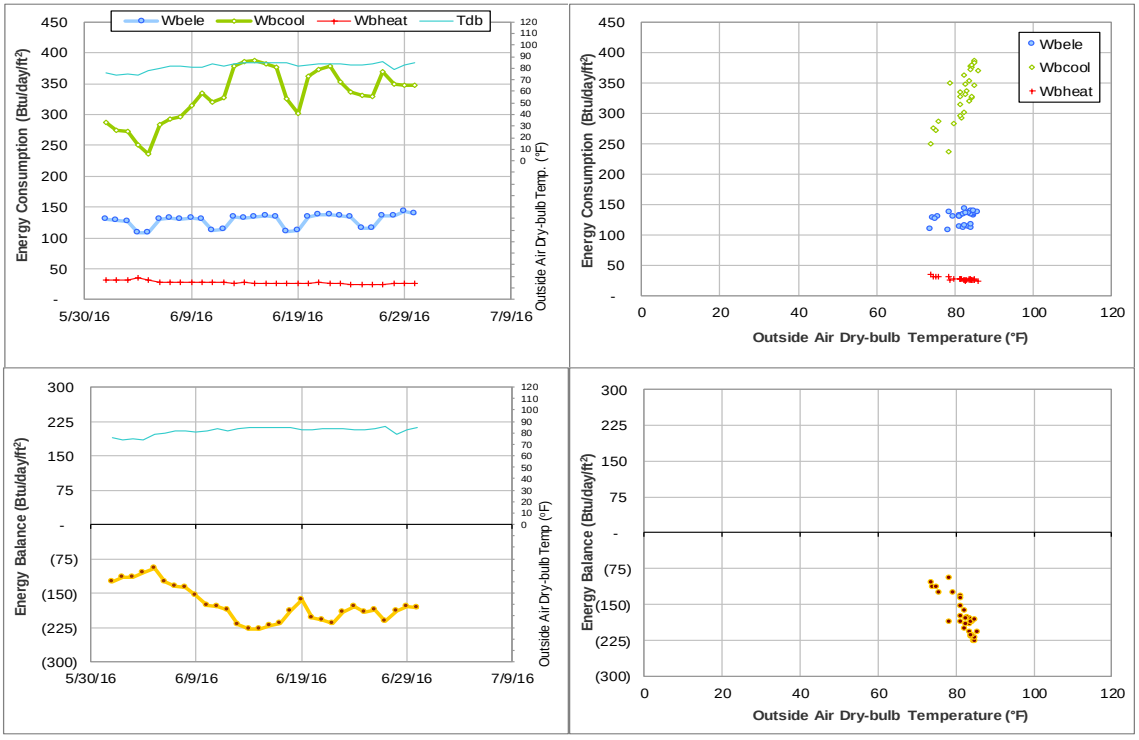


Figure IV-23 James J. Cain'51 and Mechanical Engineering Office Building TAMU BLDG # 391 Energy Balance Plot during June 2016

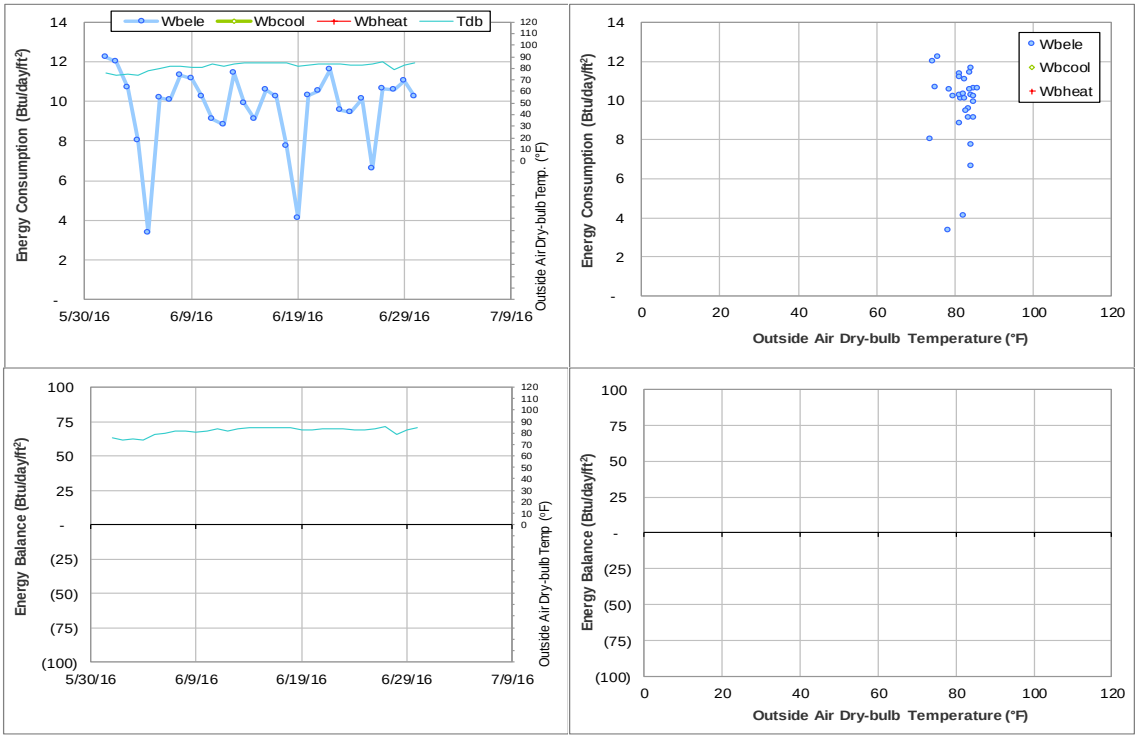


Figure IV-24 Underwood Residence Hall TAMU BLDG # 394 Energy Balance Plot during June 2016

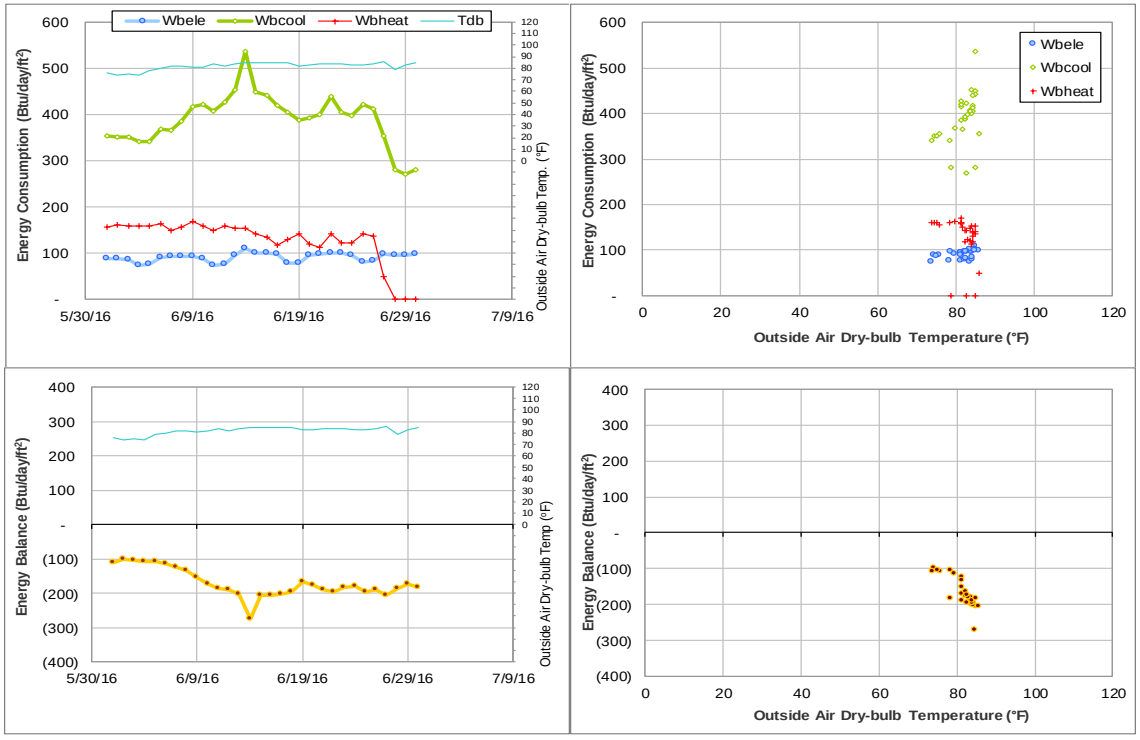


Figure IV-25 Langford Architecture Center Building A TAMU BLDG # 398 Energy Balance Plot during June 2016

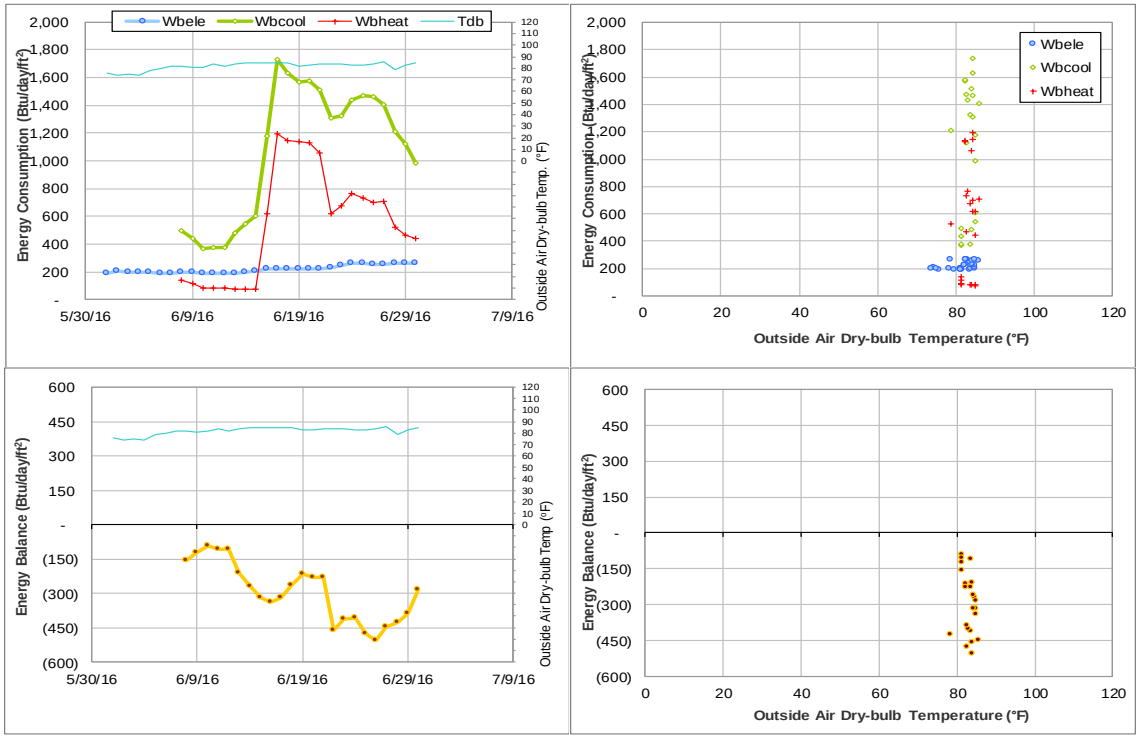


Figure IV-26 Spence Hall Dorm 1 TAMU BLDG # 400 Energy Balance Plot during June 2016

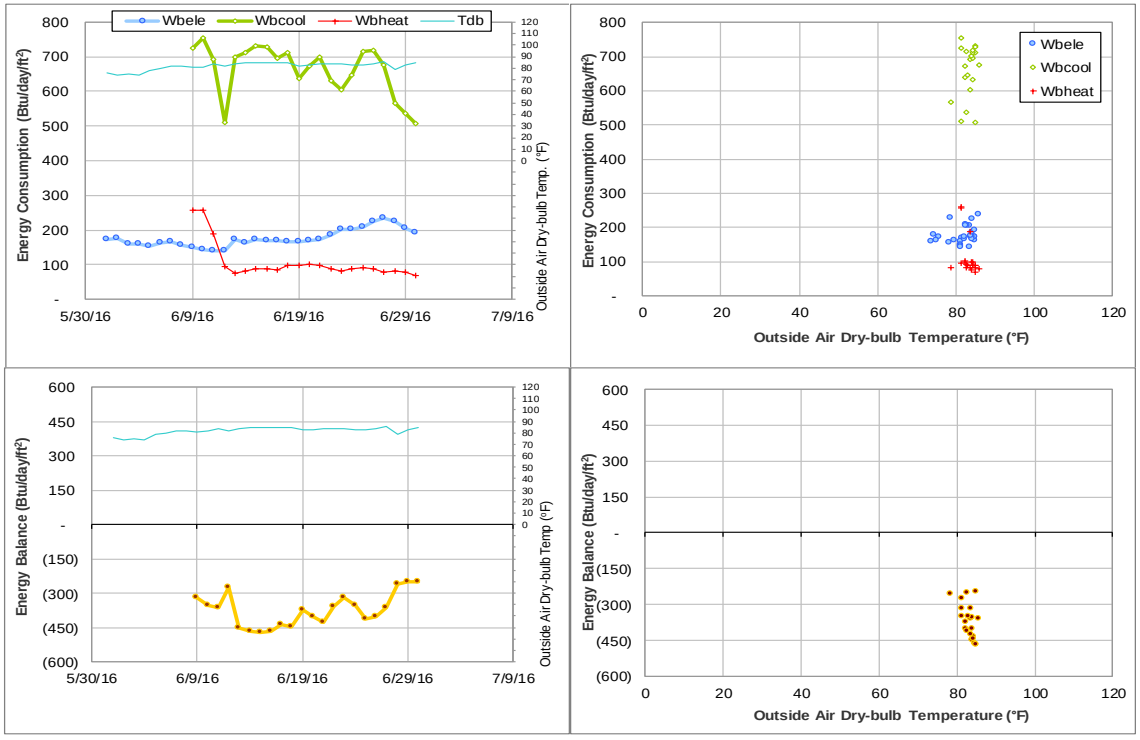


Figure IV-27 Kiest Hall Dorm 2 TAMU BLDG # 401 Energy Balance Plot during June 2016

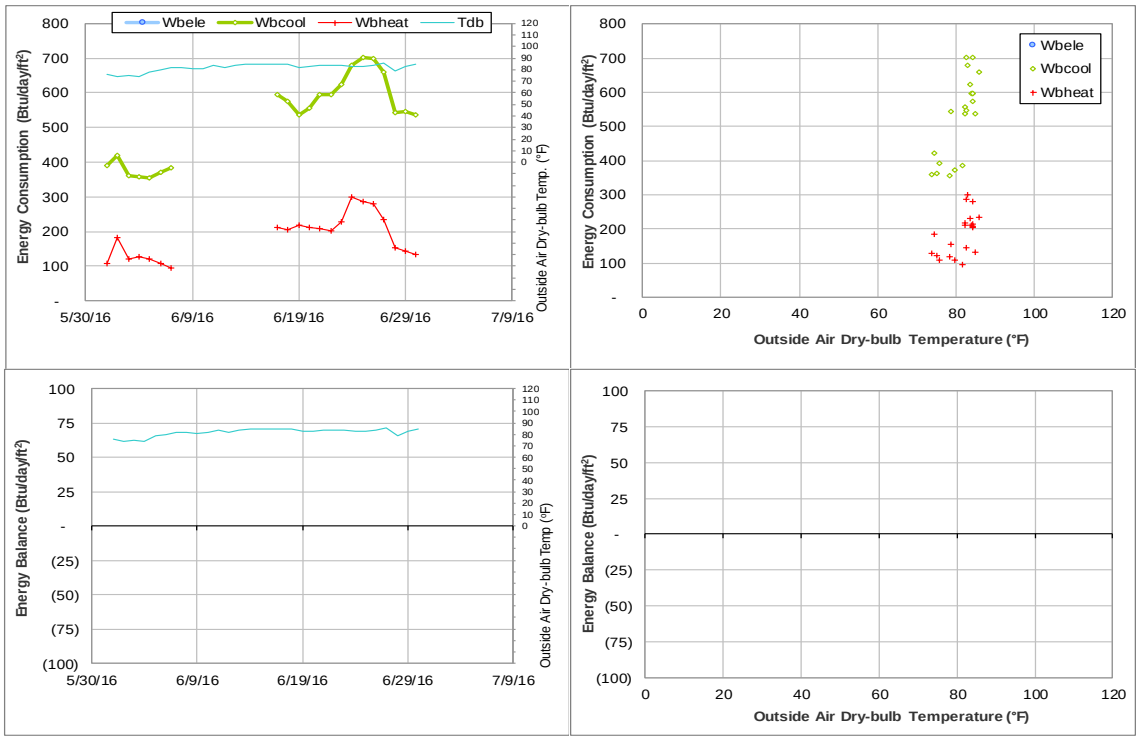


Figure IV-28 Briggs Hall Dorm 3 TAMU BLDG # 402 Energy Balance Plot during June 2016

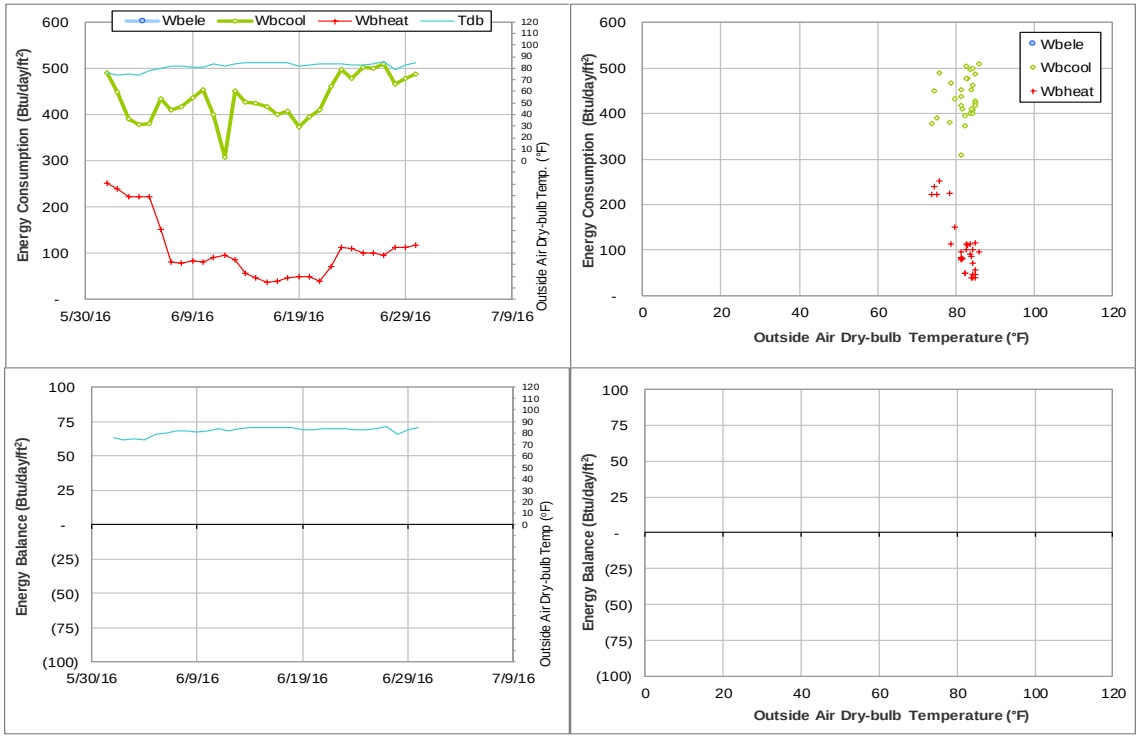


Figure IV-29 Fountain Hall Dorm 4 TAMU BLDG # 403 Energy Balance Plot during June 2016

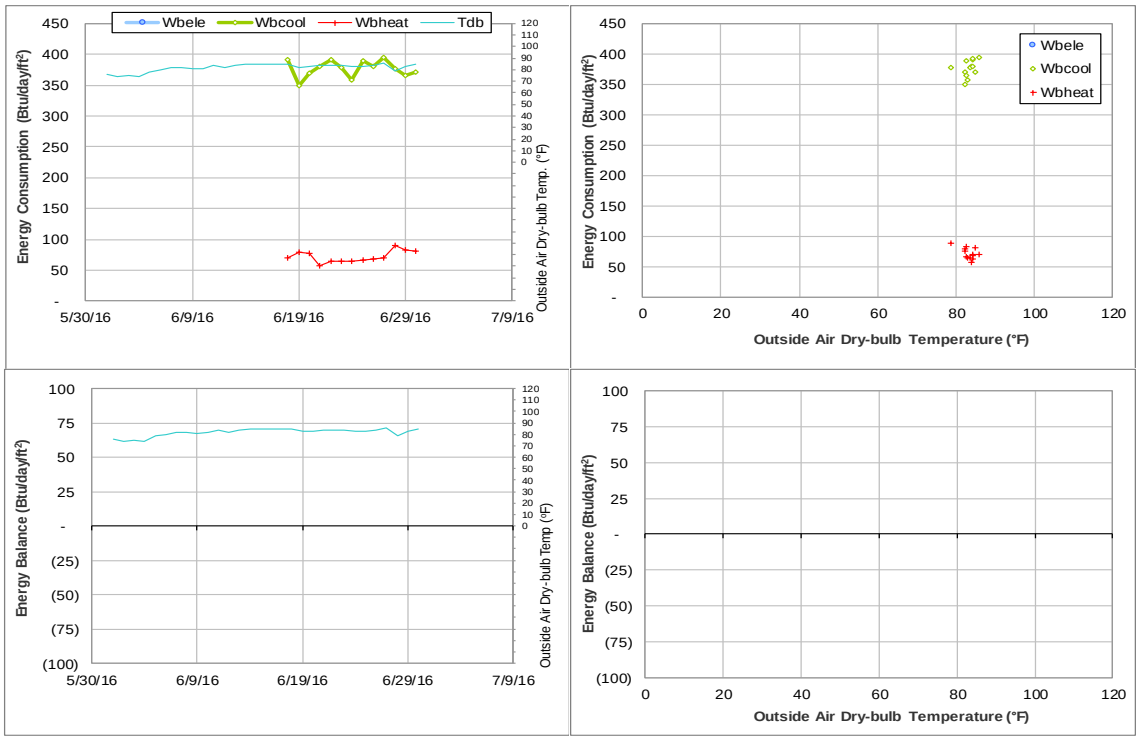


Figure IV-30 Gainer Hall Dorm 5 TAMU BLDG # 404 Energy Balance Plot during June 2016

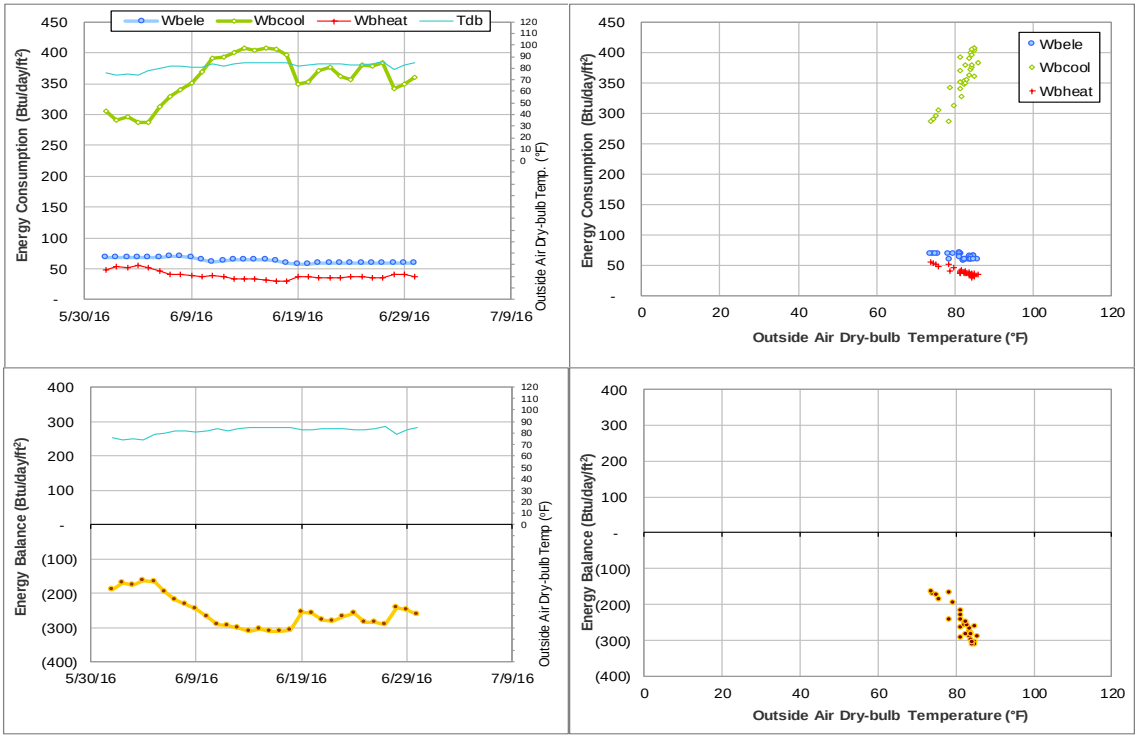


Figure IV-31 Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center TAMU BLDG # 405, 407, 1402 Energy Balance Plot during June 2016

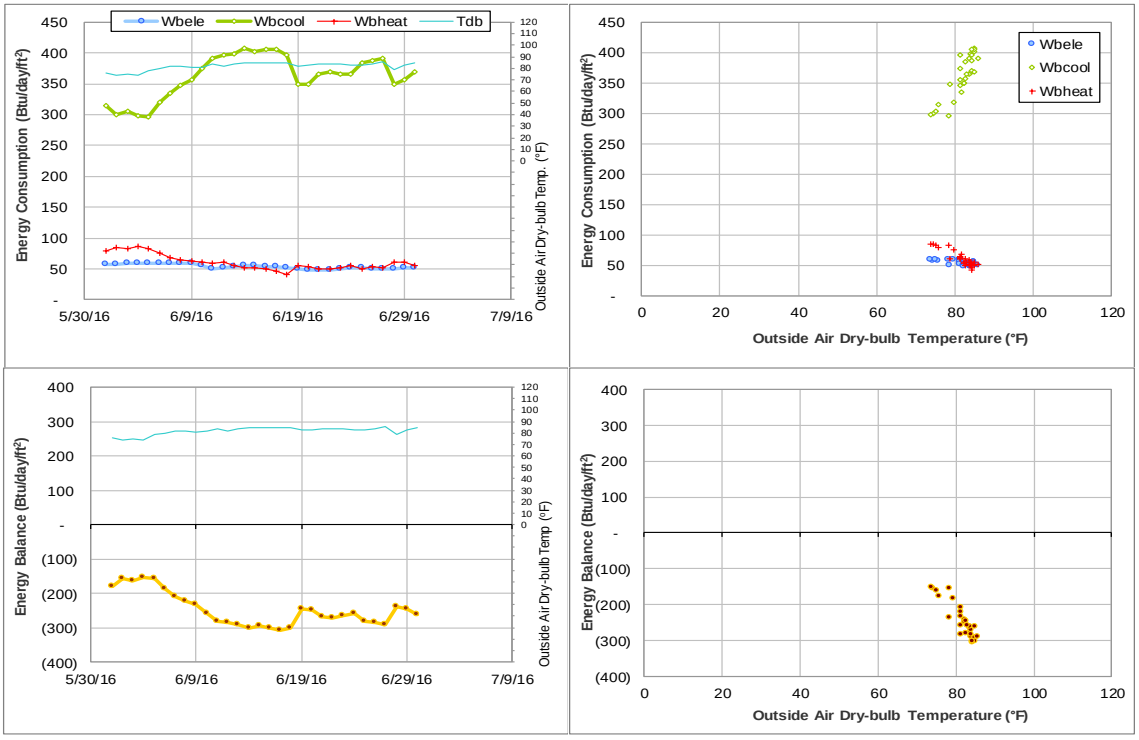


Figure IV-32 Lacy Hall - Dorm 6 TAMU BLDG # 405 Energy Balance Plot during June 2016

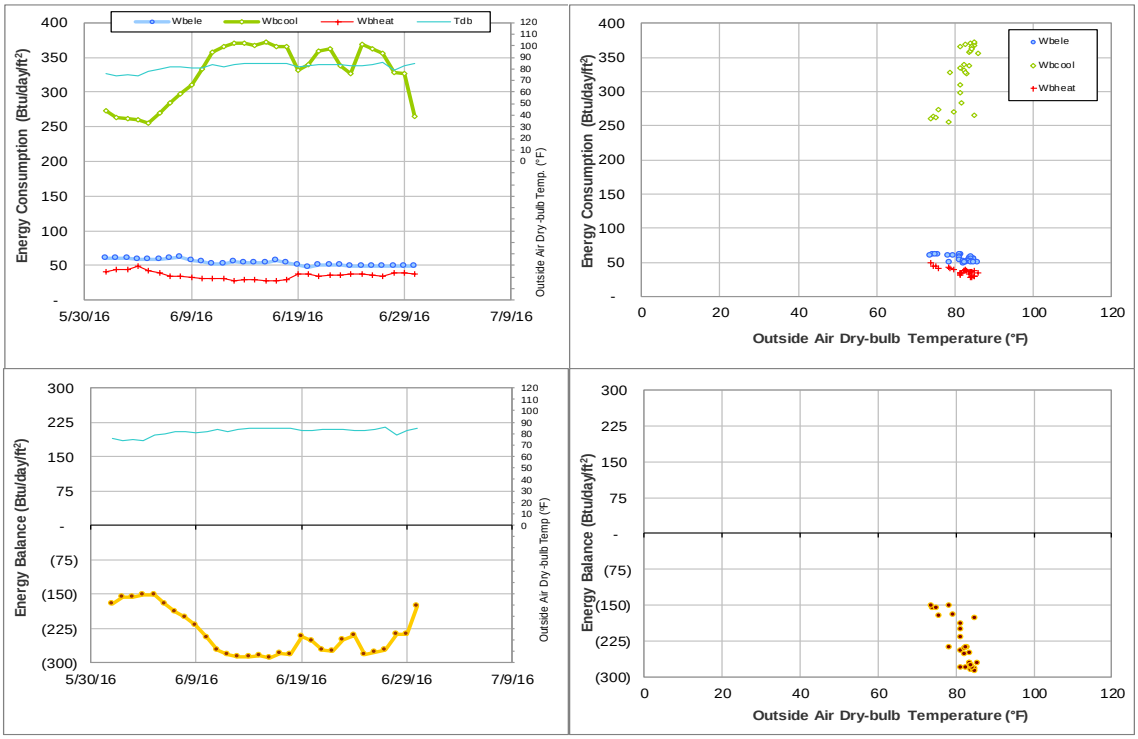


Figure IV-33 Harrell Hall - Dorm 8 TAMU BLDG # 407 Energy Balance Plot during June 2016

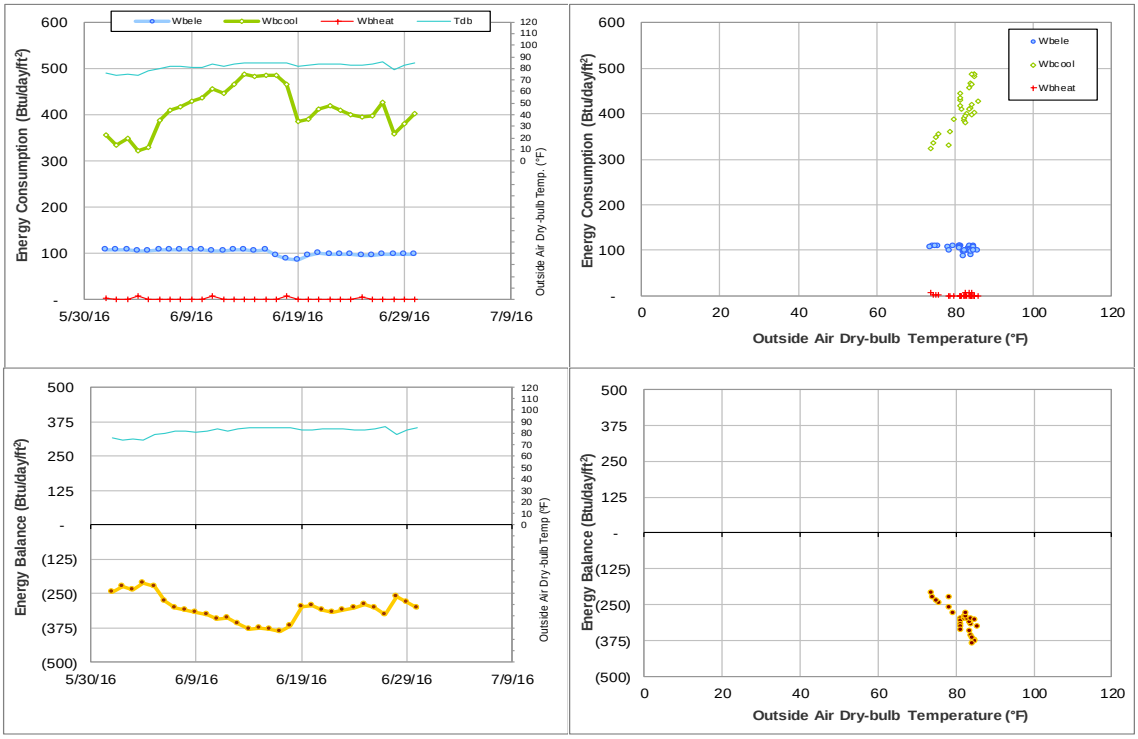


Figure IV-34 Buzbee Leadership Learning Center TAMU BLDG # 1402 Energy Balance Plot during June 2016

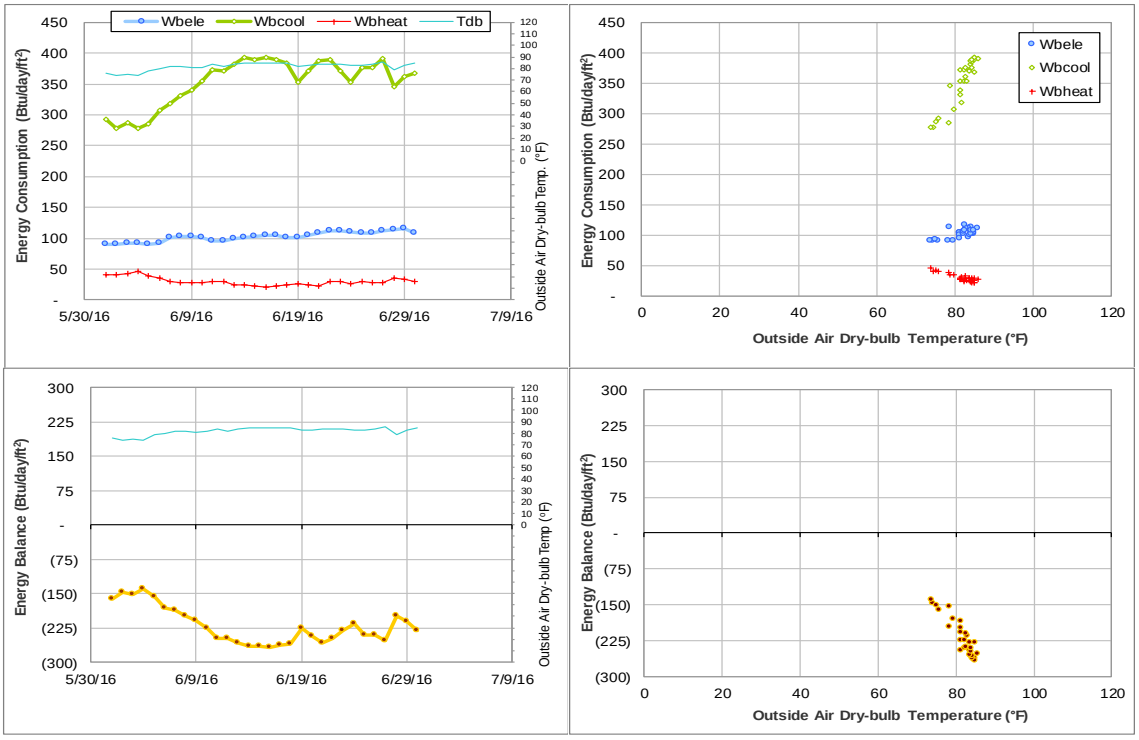


Figure IV-35 Leonard Hall - Dorm 7 and Ash LLC TAMU BLDG # 406 and 1403 Energy Balance Plot during June 2016

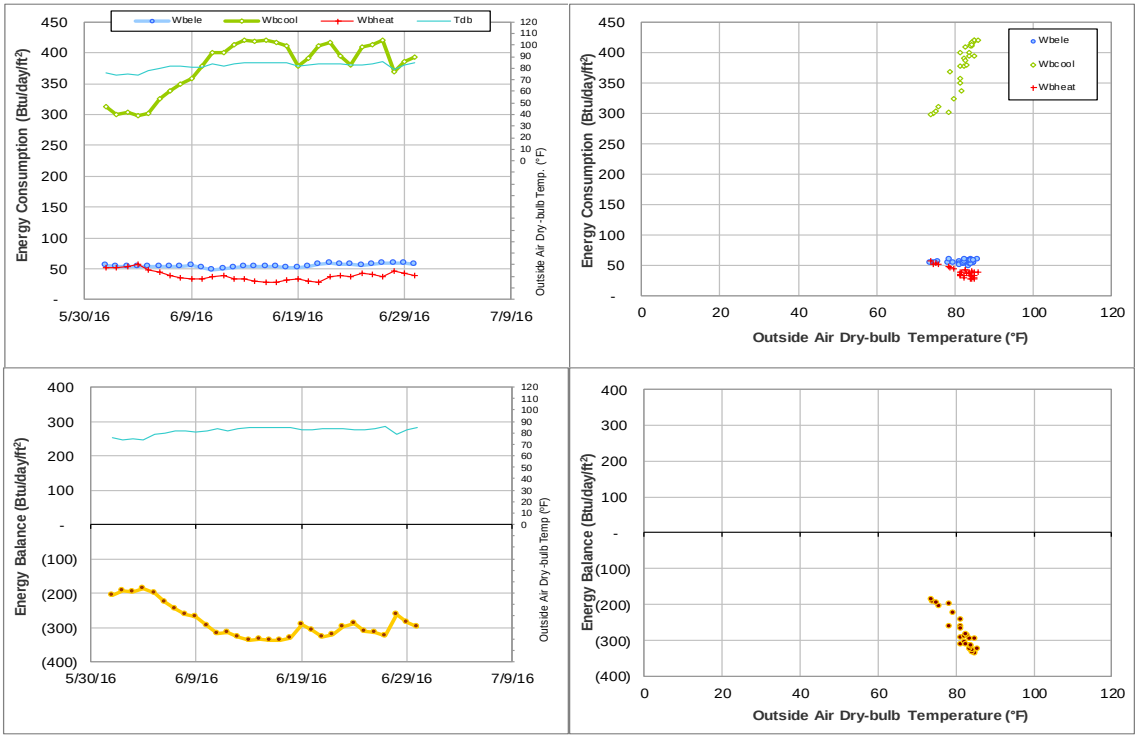


Figure IV-36 Leonard Hall - Dorm 7 TAMU BLDG # 406 Energy Balance Plot during June 2016

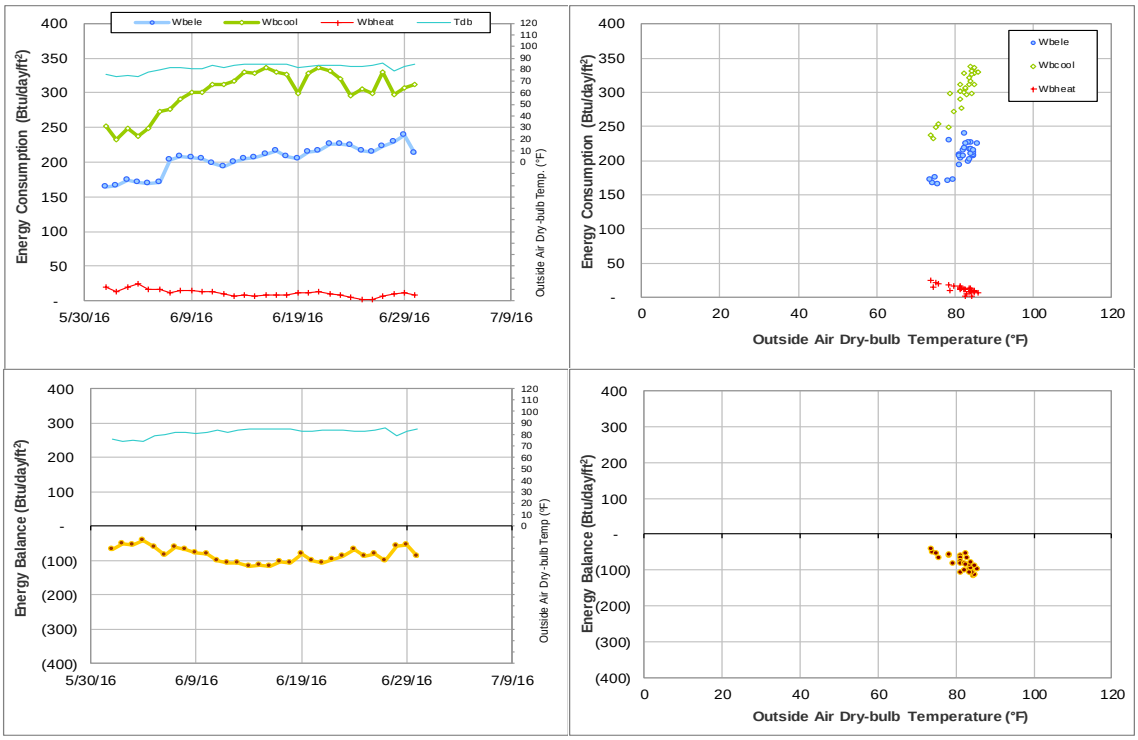


Figure IV-37 H. Grady Ash, Jr. '58 Leadership Learning Center TAMU BLDG # 1403 Energy Balance Plot during June 2016

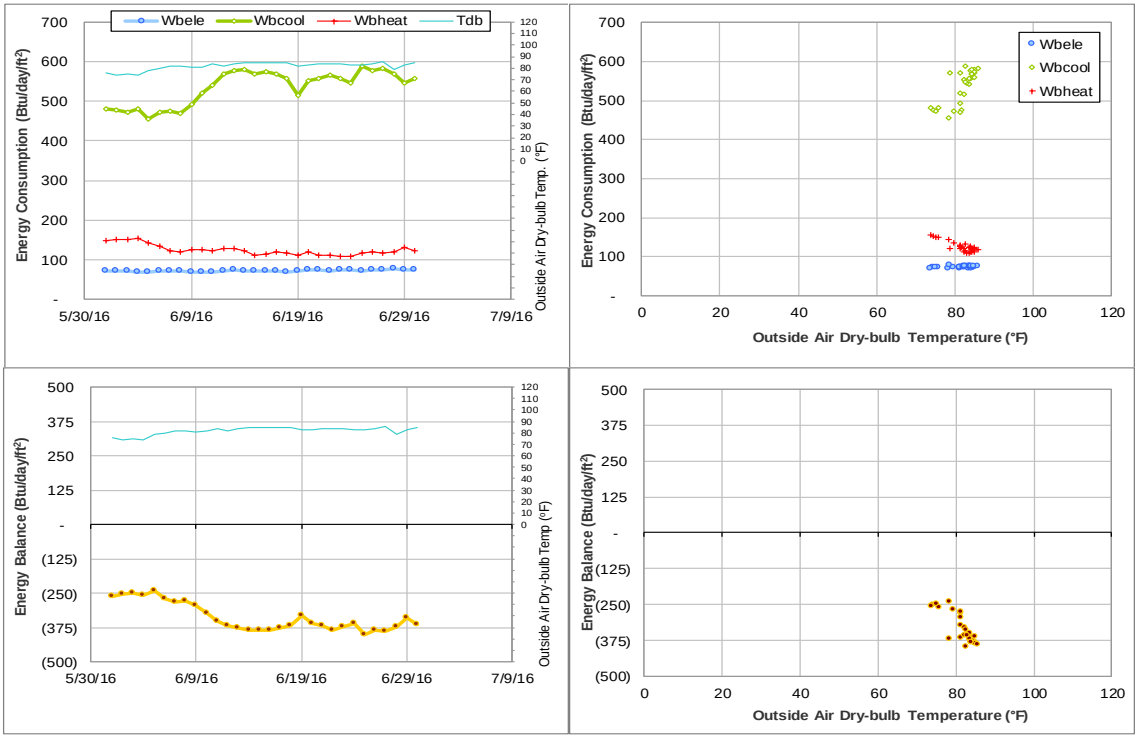


Figure IV-38 Moses Residence Hall TAMU BLDG # 412 Energy Balance Plot during June 2016

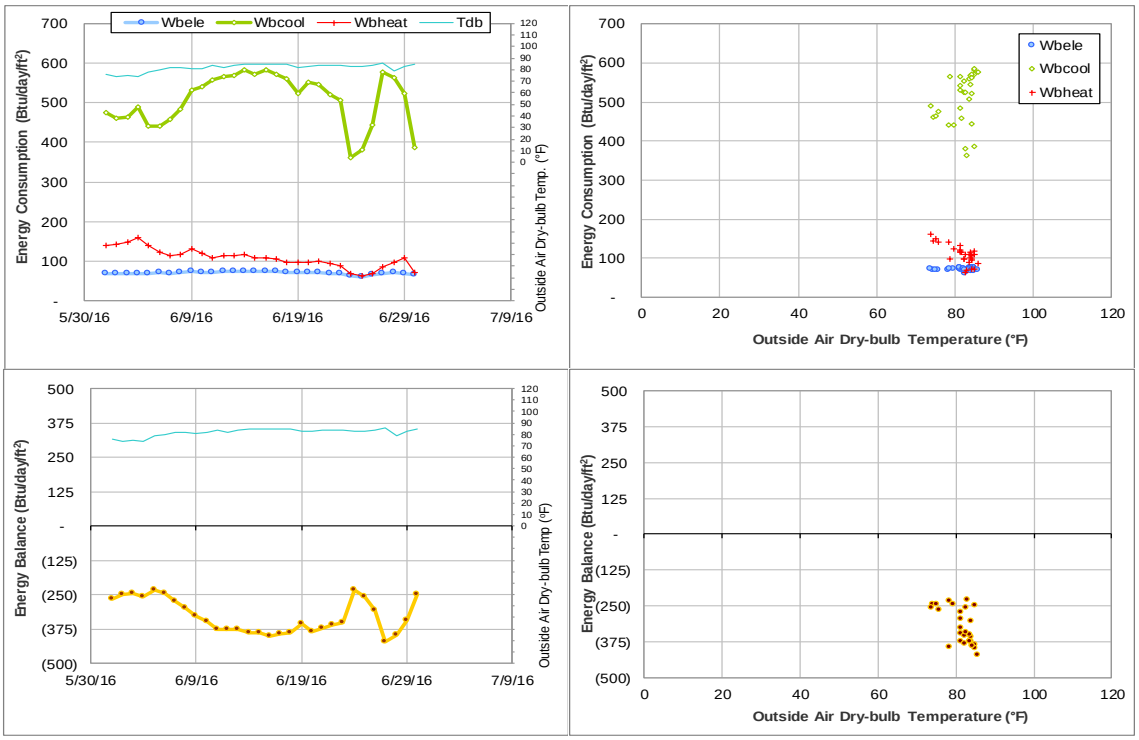


Figure IV-39 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during June 2016

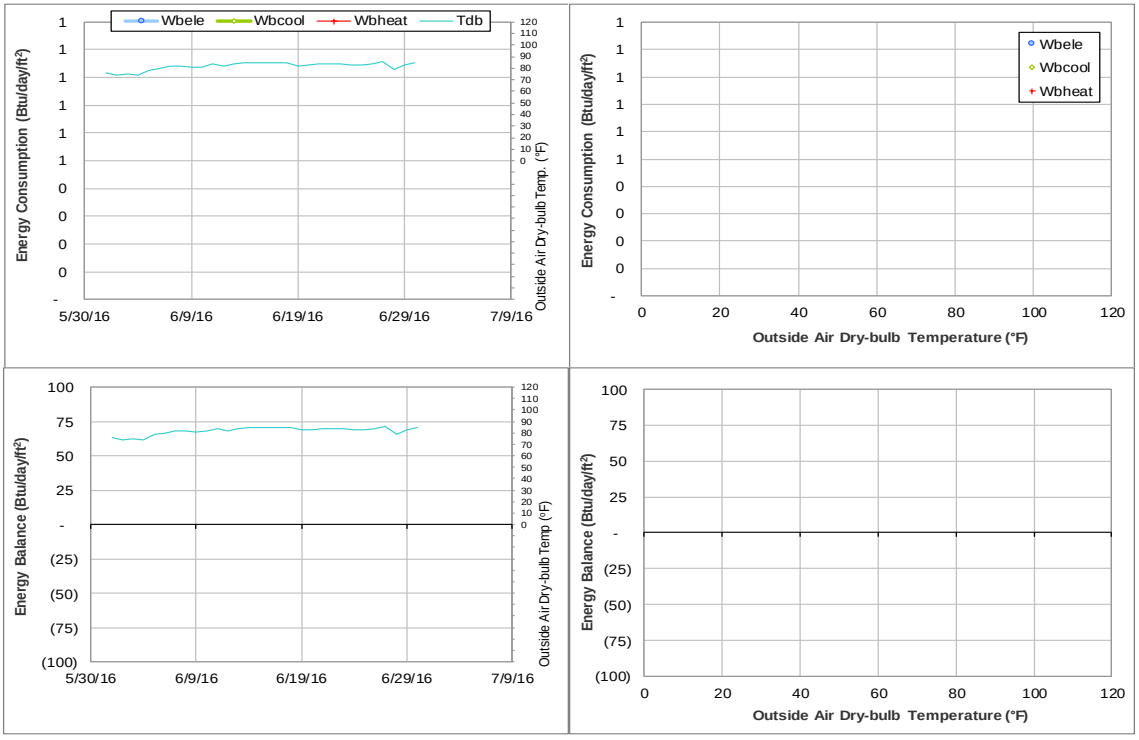


Figure IV-40 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during June 2016

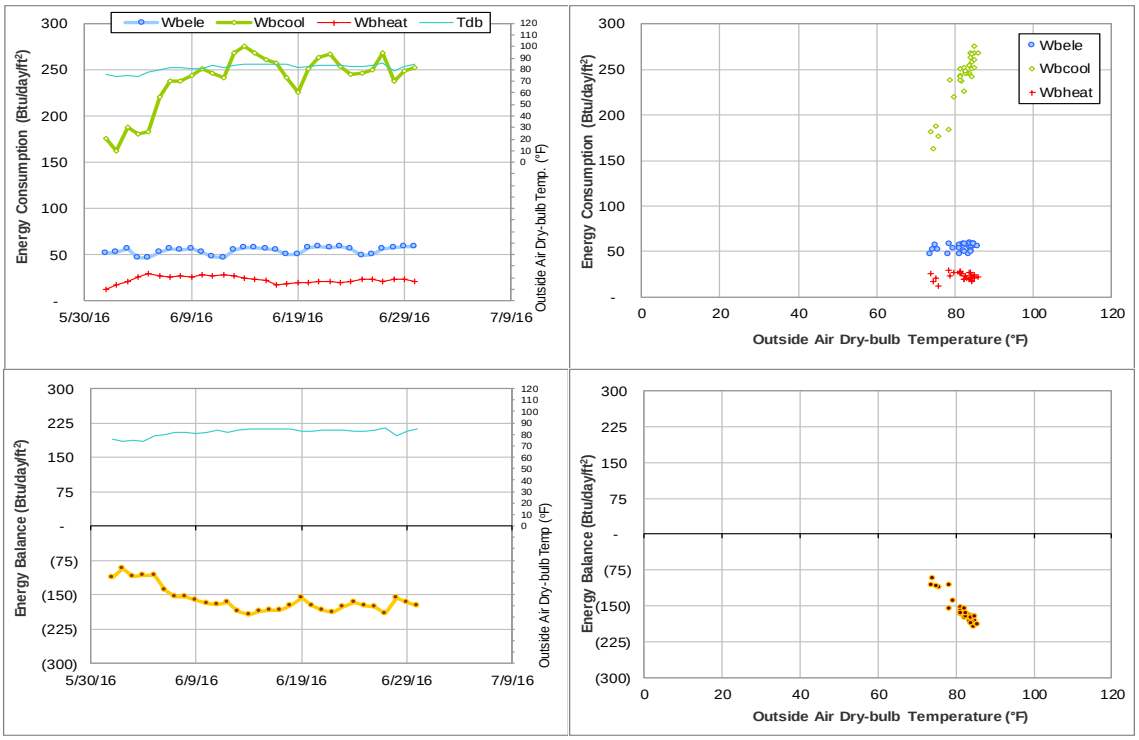


Figure IV-41 Milner Hall TAMU BLDG # 420 Energy Balance Plot during June 2016

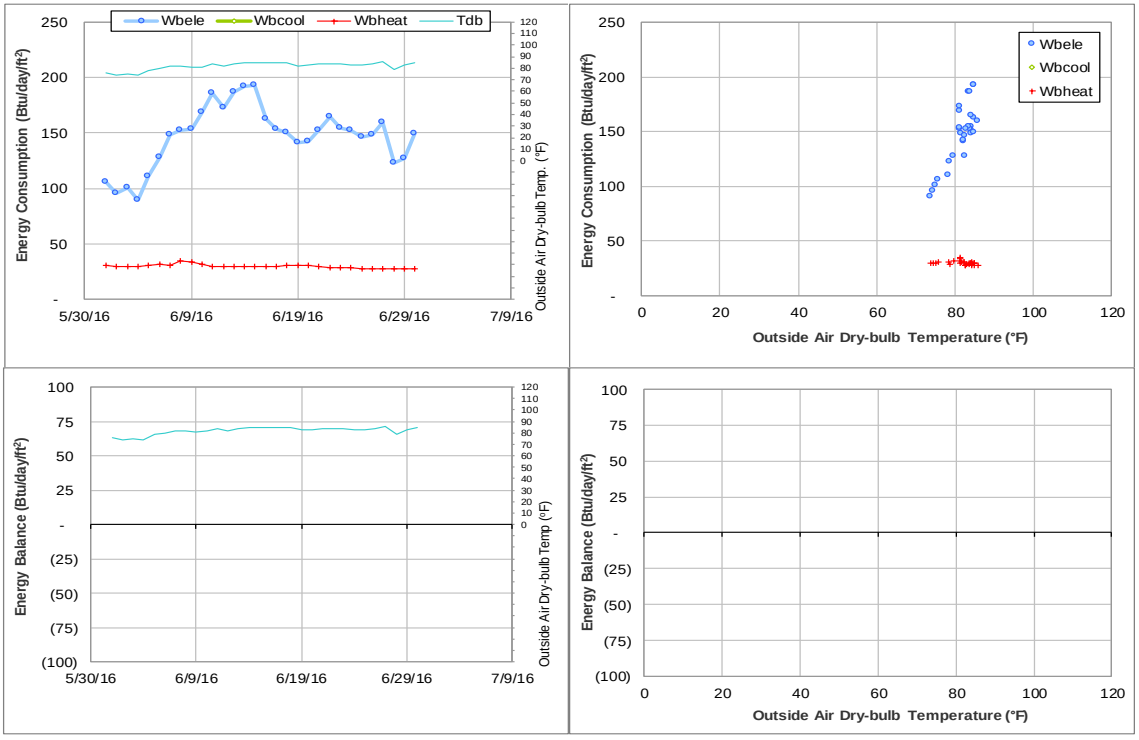


Figure IV-42 Walton Residence Hall TAMU BLDG # 422 Energy Balance Plot during June 2016

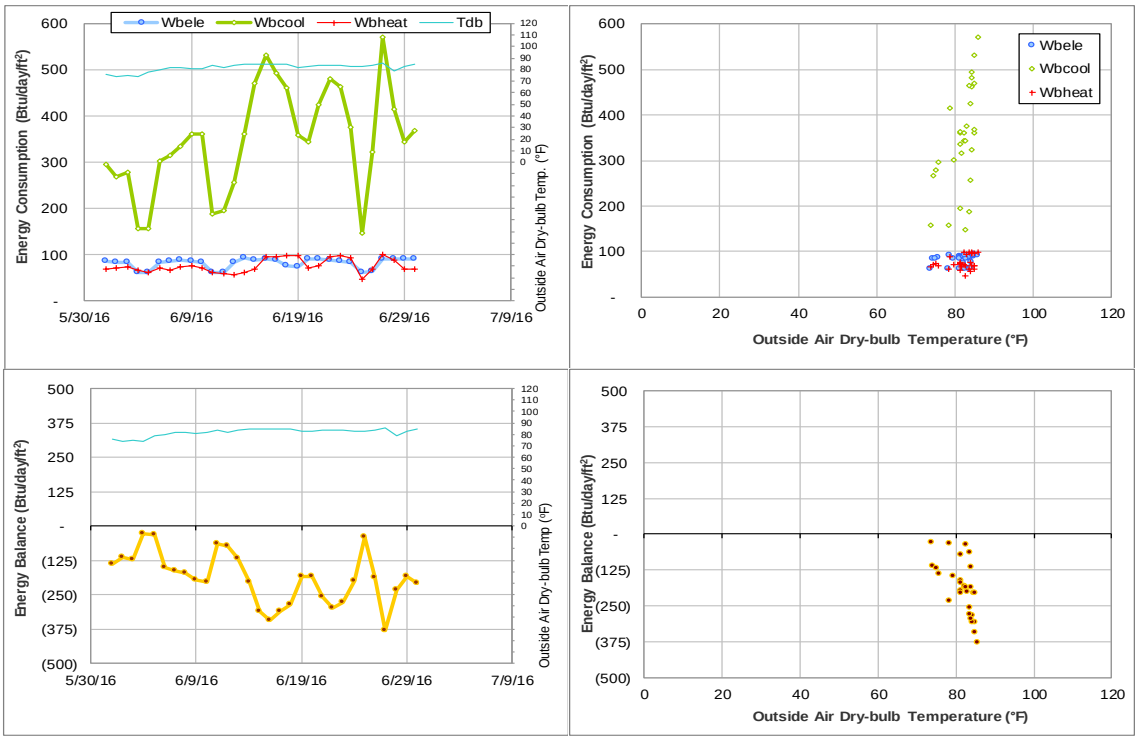


Figure IV-43 Hotard Hall TAMU BLDG # 424 Energy Balance Plot during June 2016

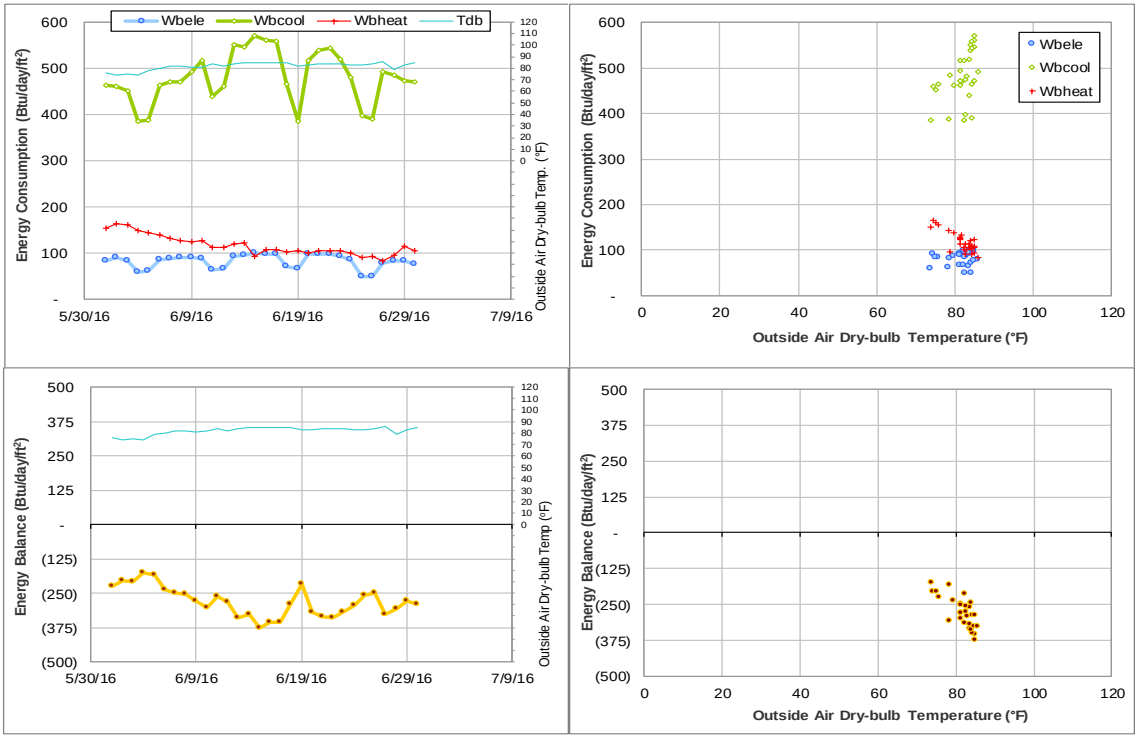


Figure IV-44 Henderson Hall TAMU BLDG # 425 Energy Balance Plot during June 2016

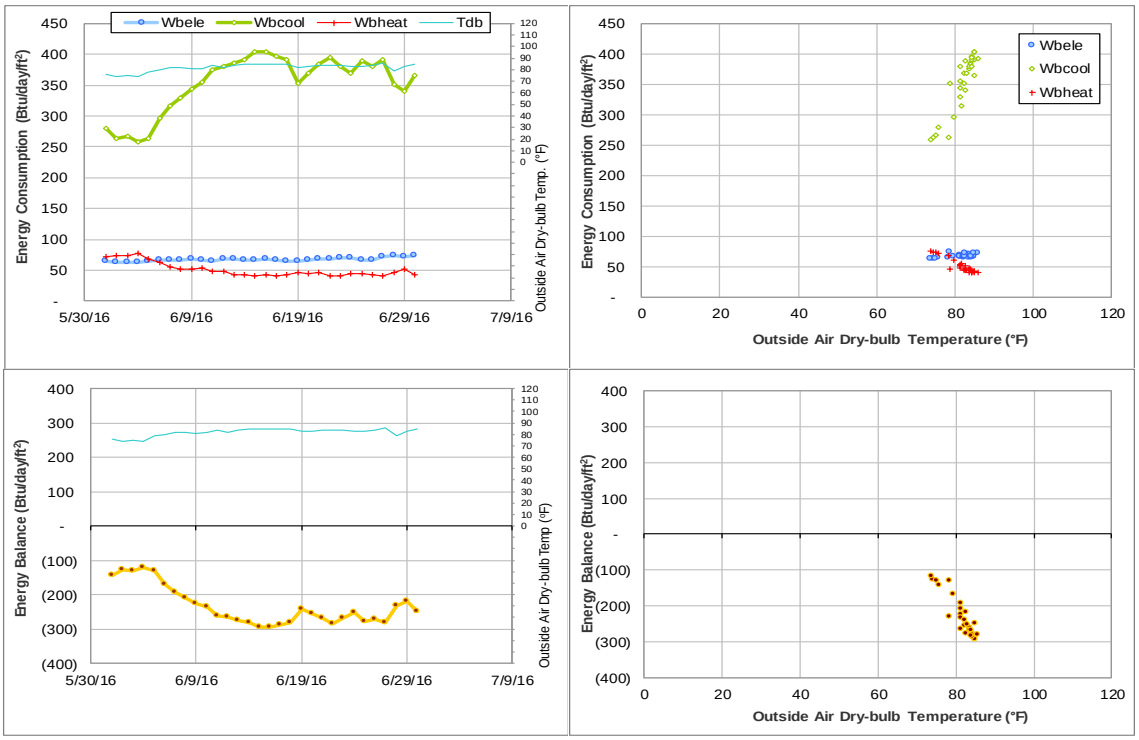


Figure IV-45 FHK Complex TAMU BLDG # 426 Energy Balance Plot during June 2016

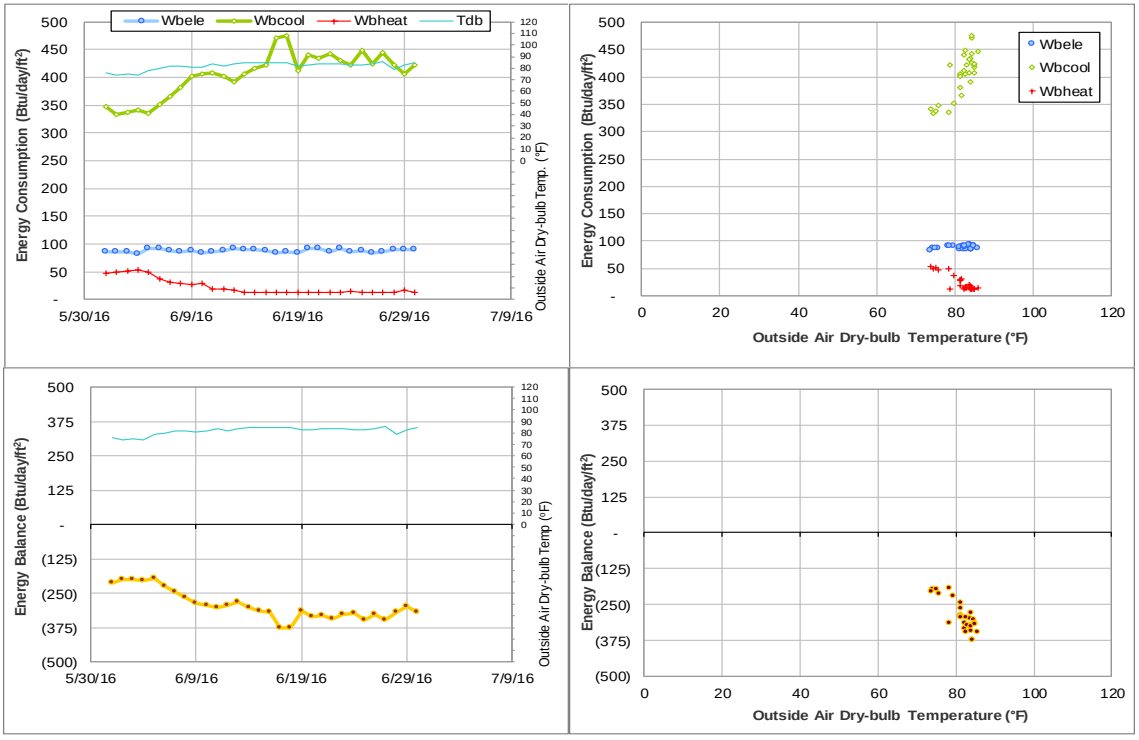


Figure IV-46 Schumacher Residence Hall TAMU BLDG # 430 Energy Balance Plot during June 2016

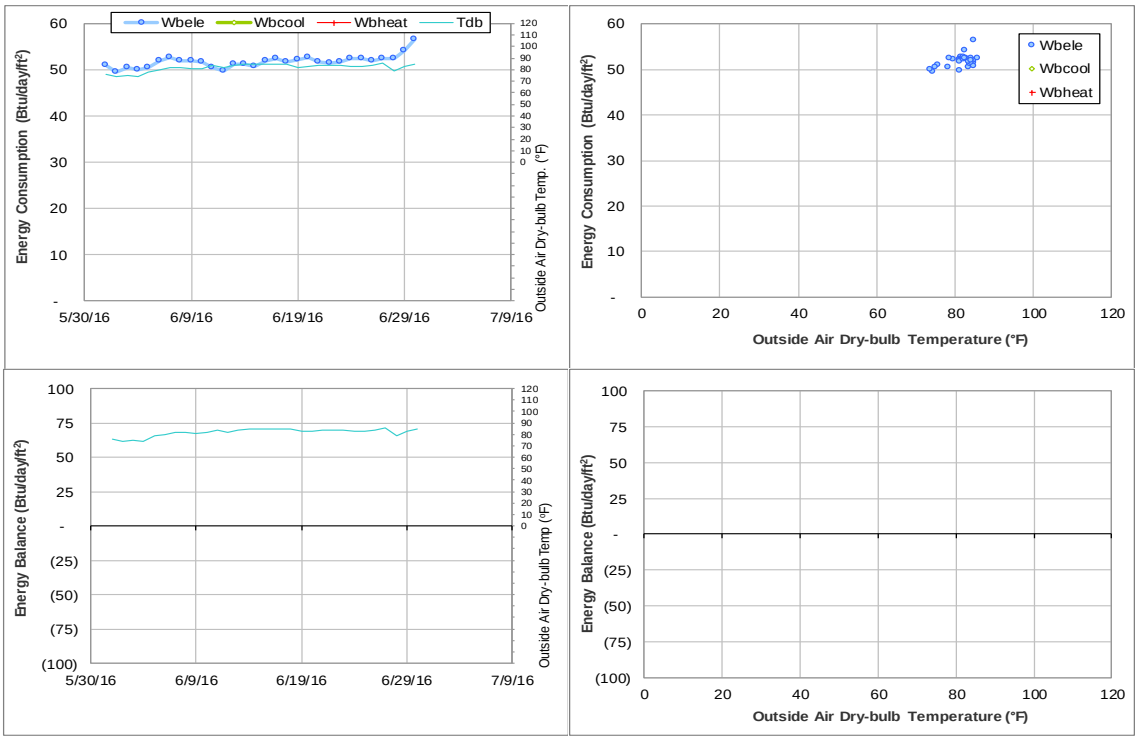


Figure IV-47 Mosher Commons Krueger Dunn Aston TAMU BLDG # 433, 440, 441, 442 and 447 Energy Balance Plot during June 2016

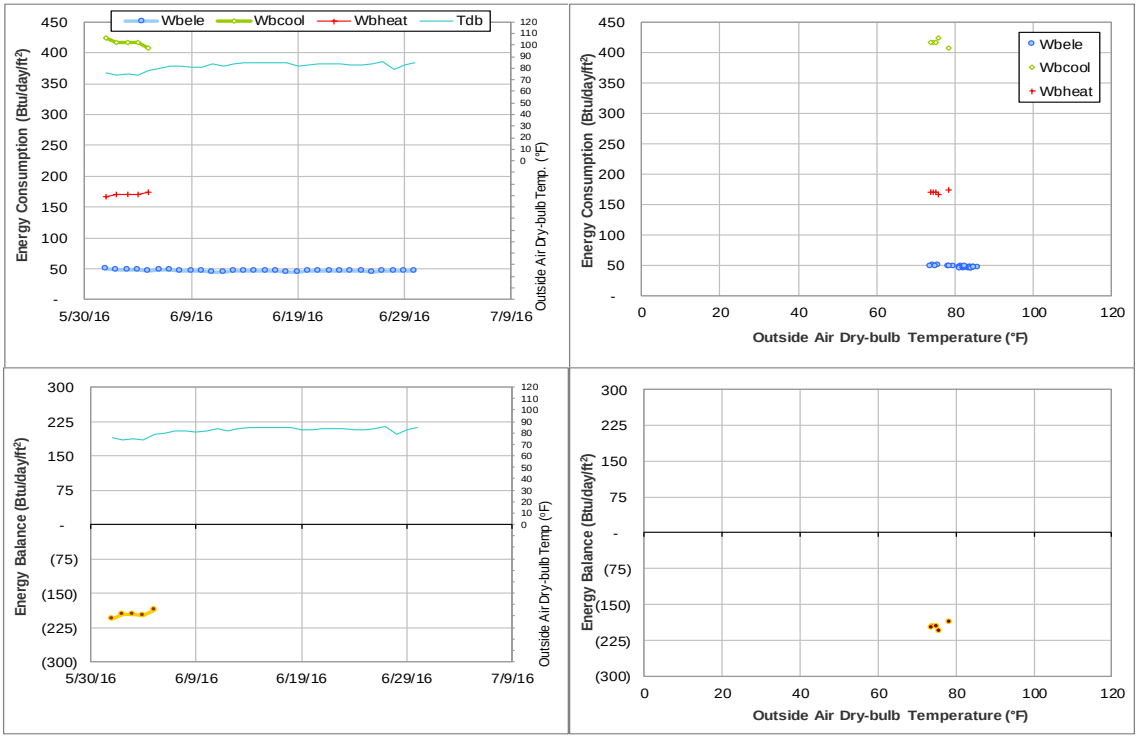


Figure IV-48 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during June 2016

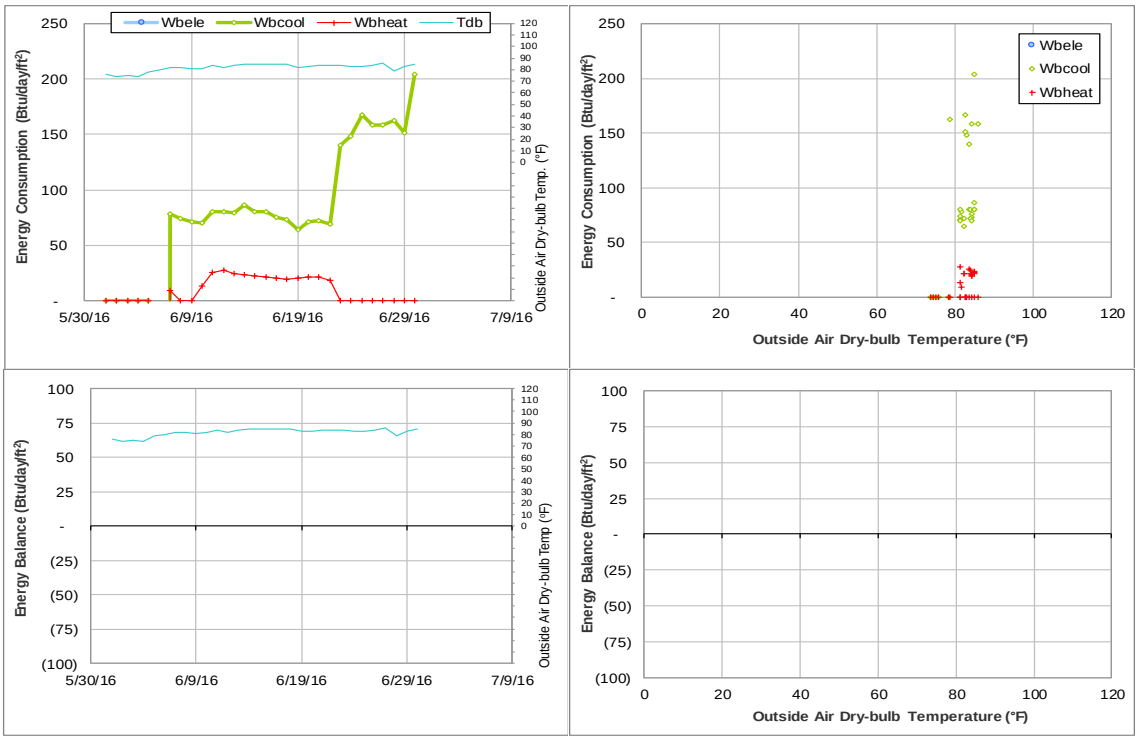


Figure IV-49 Commons Hall TAMU BLDG # 440 Energy Balance Plot during June 2016

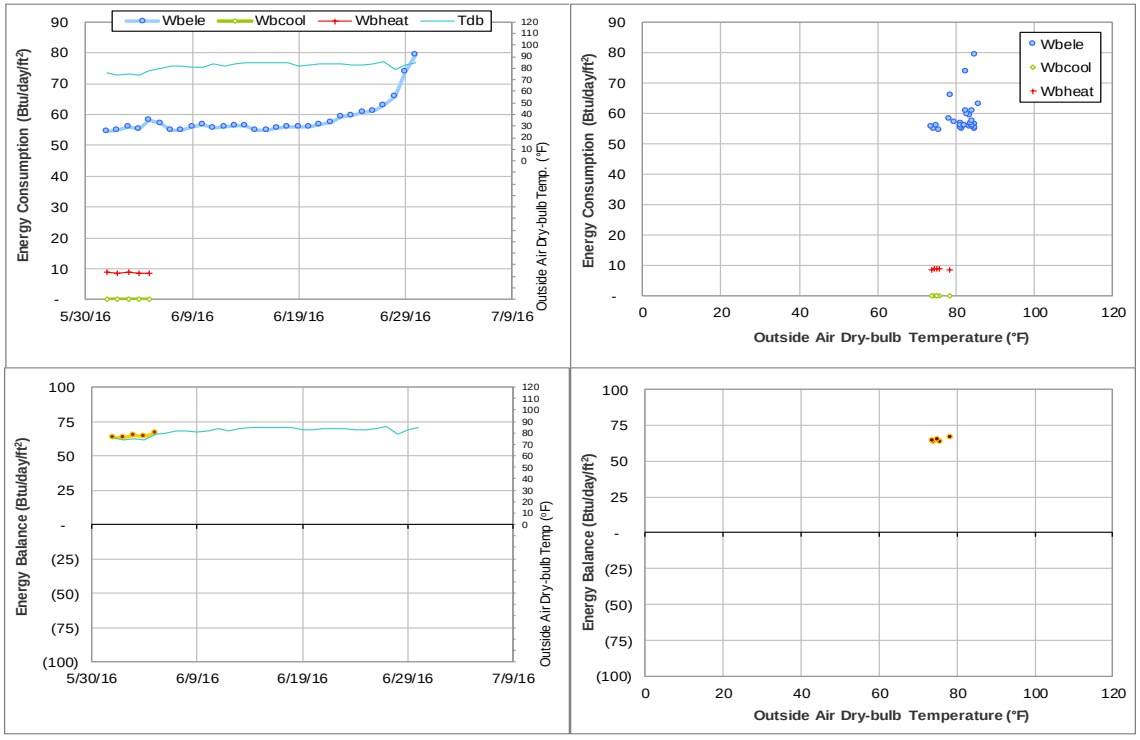


Figure IV-50 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during June 2016

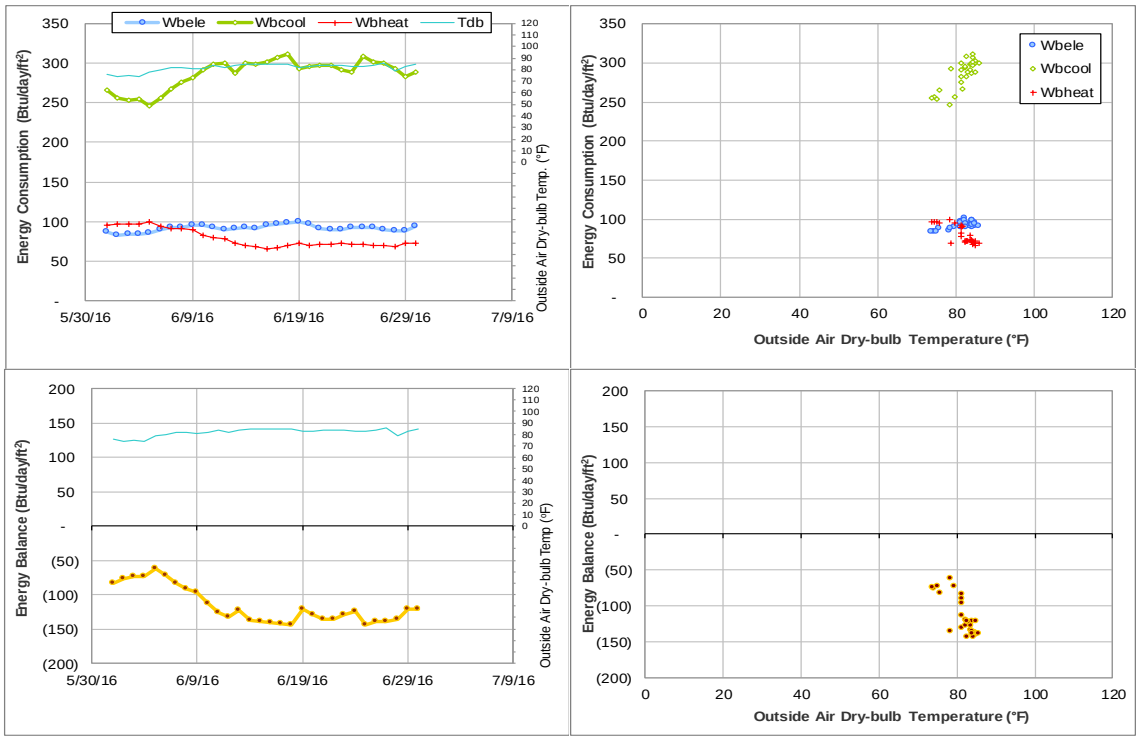


Figure IV-51 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during June 2016

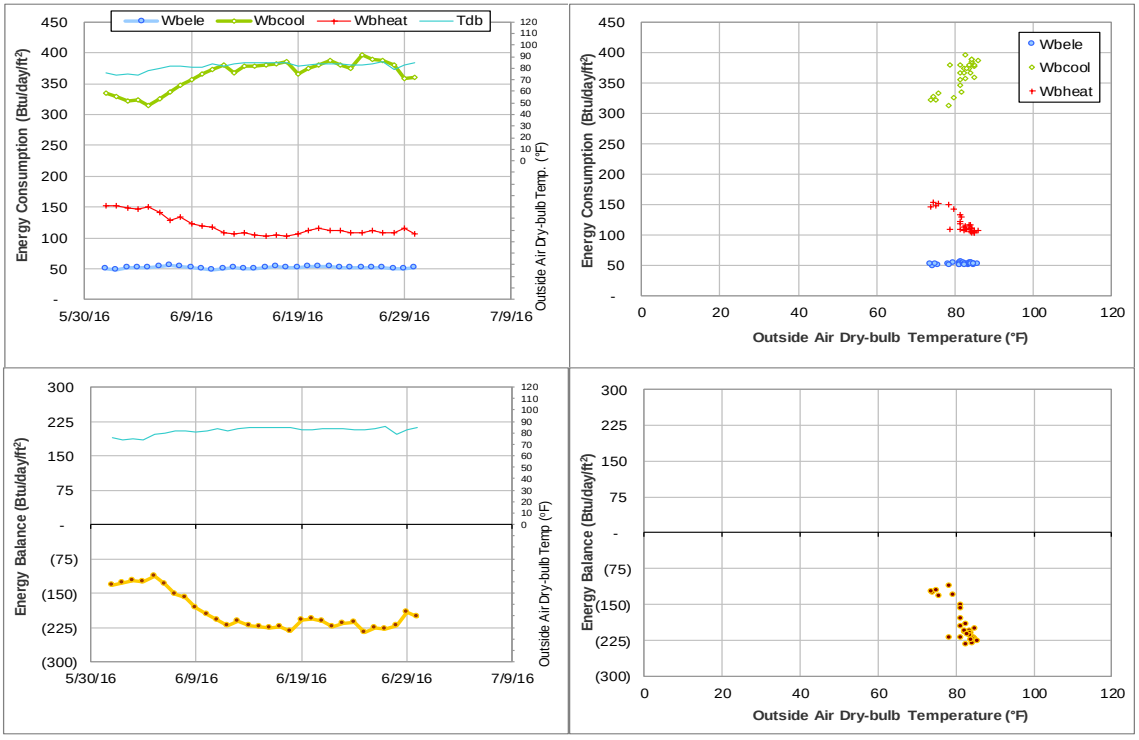


Figure IV-52 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during June 2016

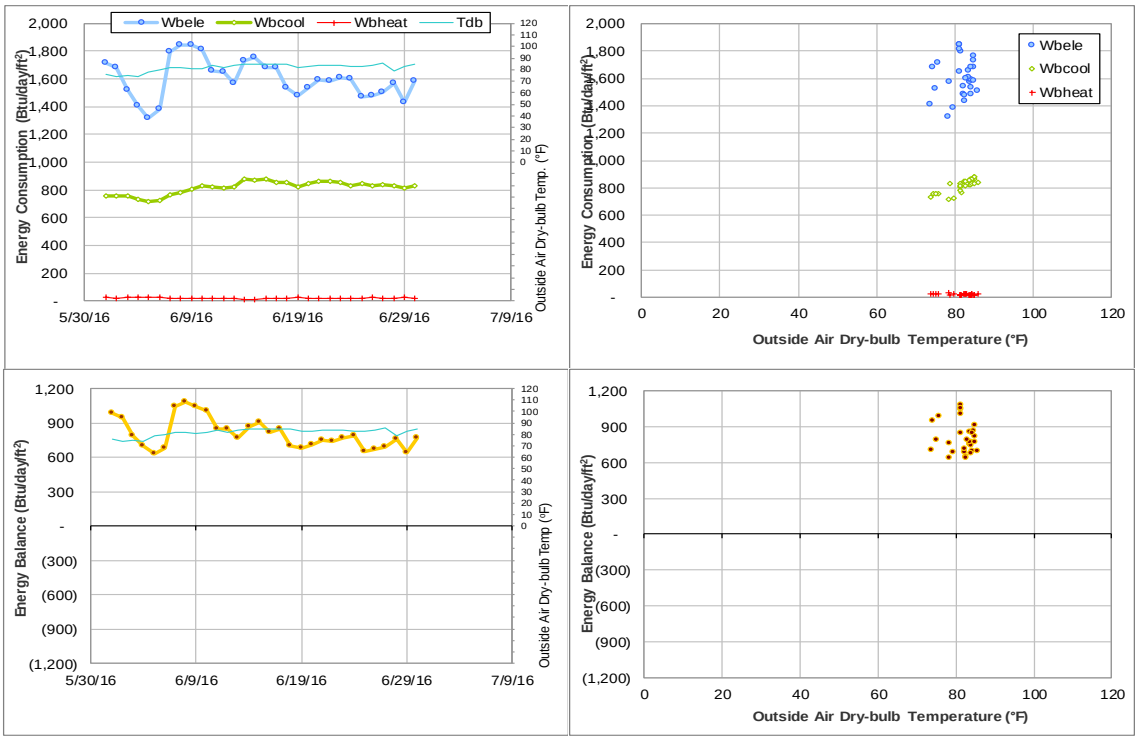


Figure IV-53 Luedecke Building (Cyclotron) TAMU BLDG # 434 Energy Balance Plot during June 2016

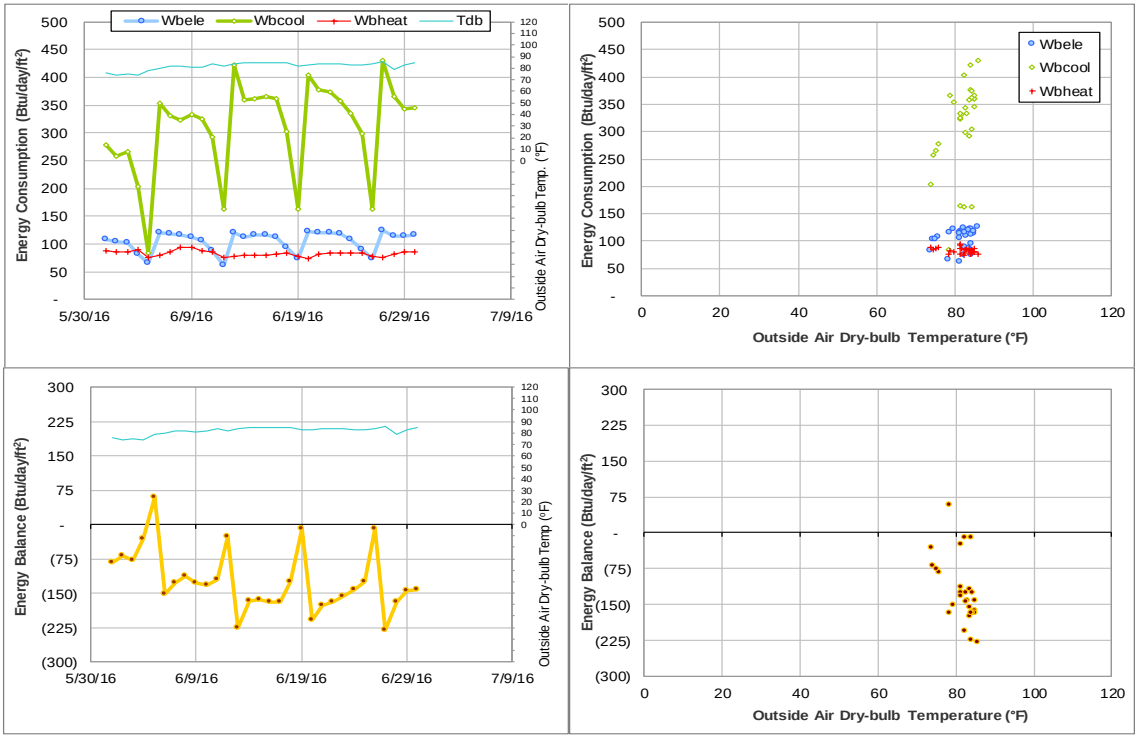


Figure IV-54 Harrington Education Center Office Tower TAMU BLDG # 435 Energy Balance Plot during June 2016

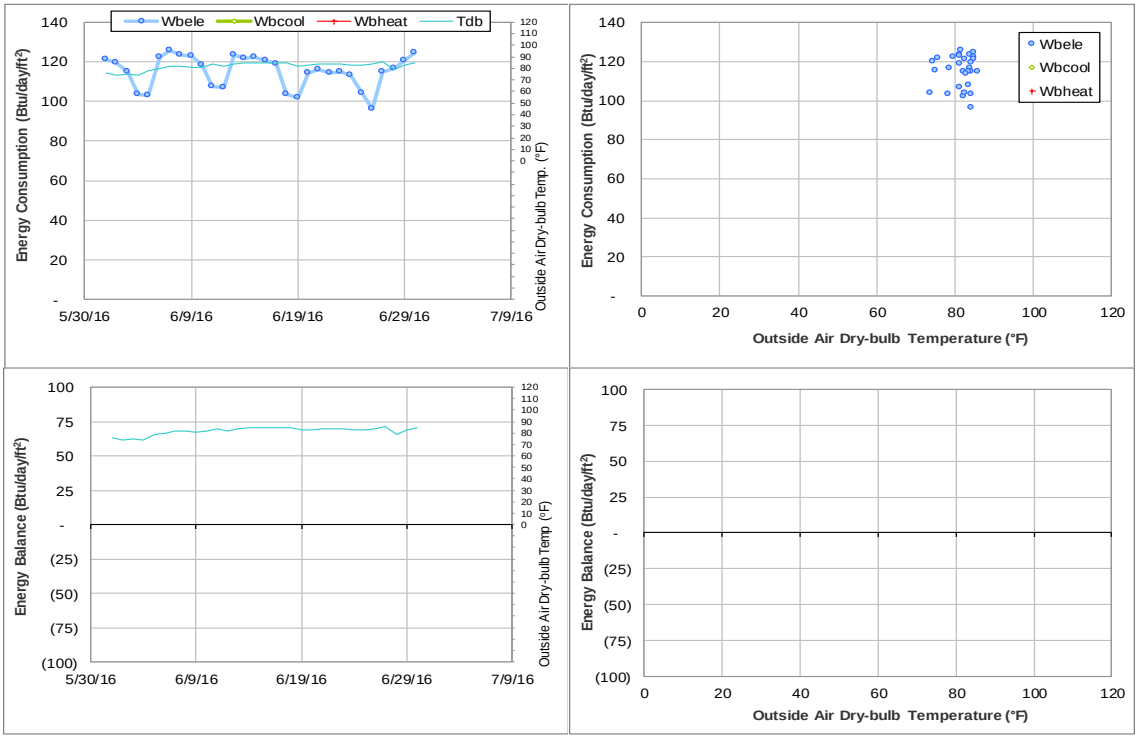


Figure IV-55 Reed-McDonald and Engineering Innovation Center TAMU BLDG # 436 and 499 Energy Balance Plot during June 2016

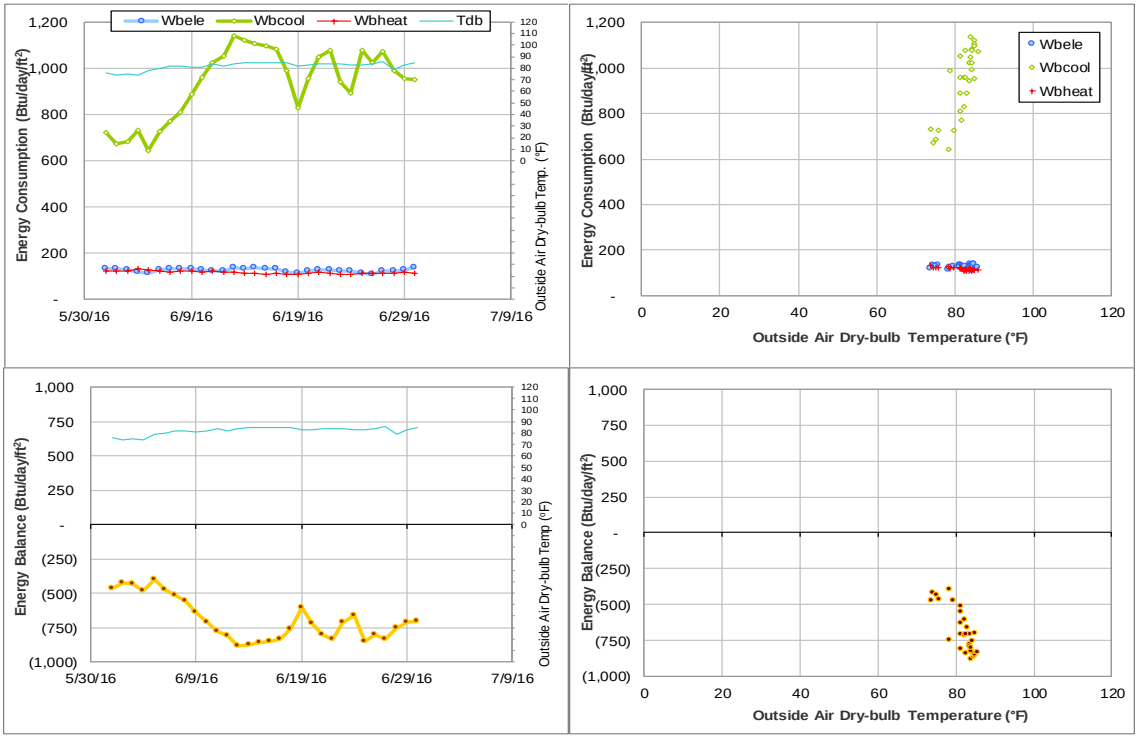


Figure IV-56 Reed-McDonald Building TAMU BLDG # 436 Energy Balance Plot during June 2016

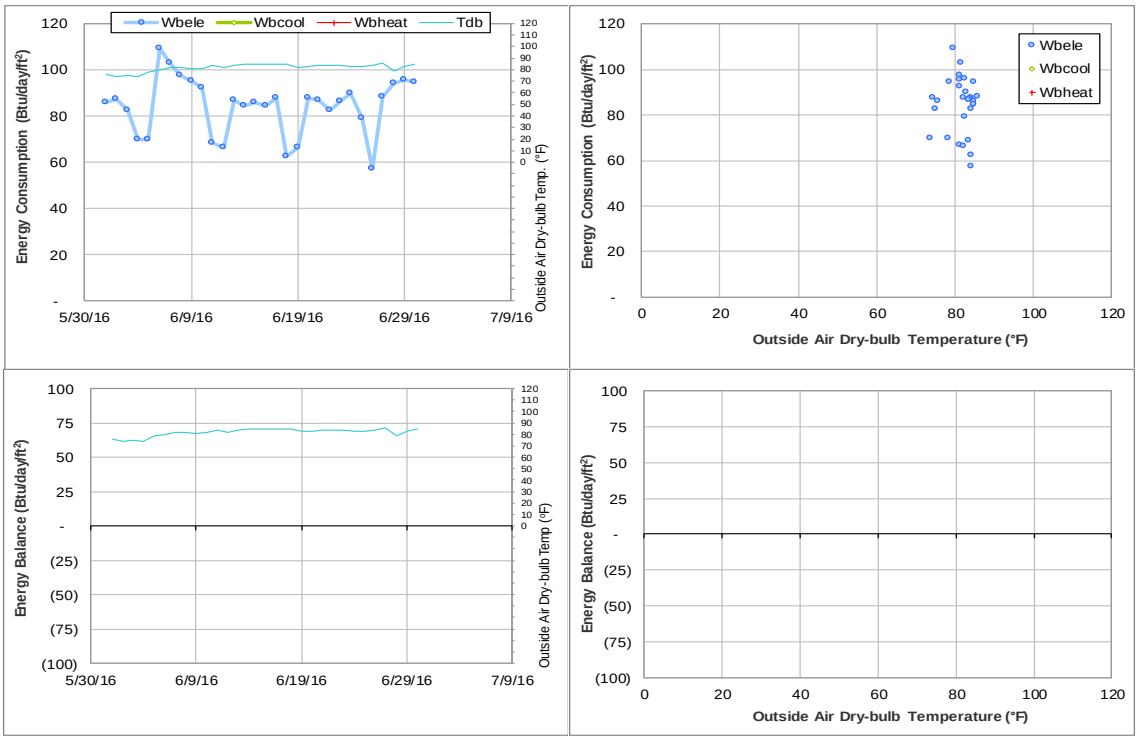


Figure IV-57 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during June 2016

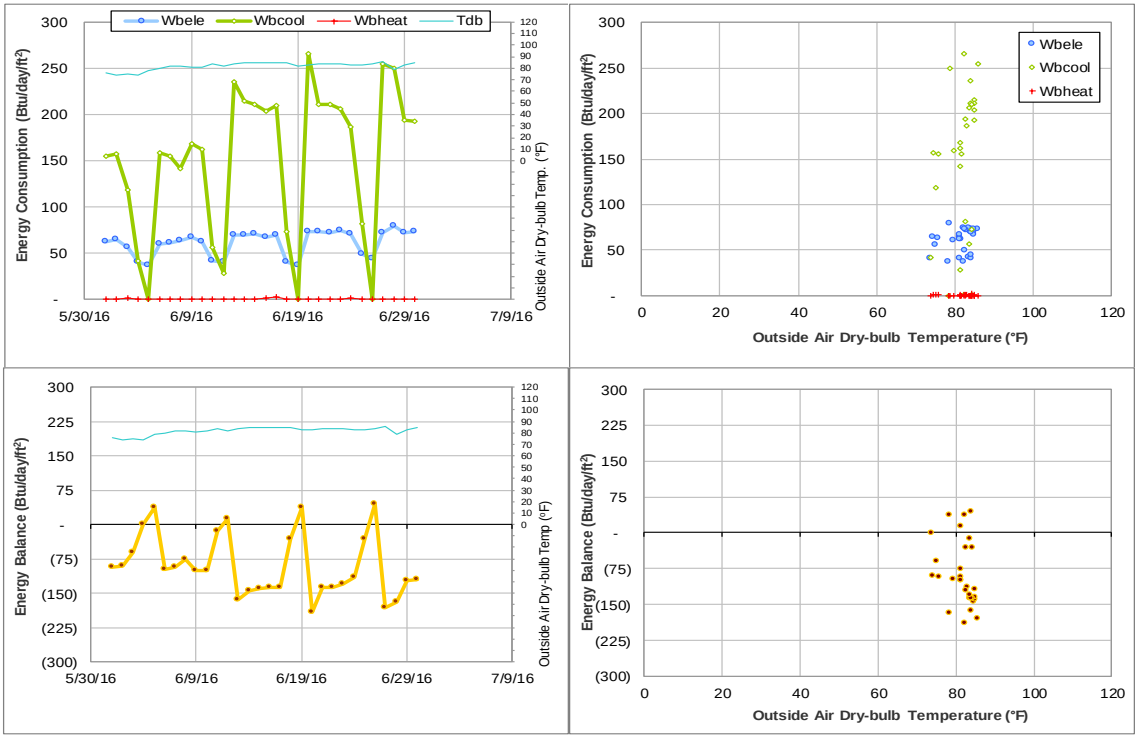


Figure IV-58 Harrington Education Center Classroom Building TAMU BLDG # 438 Energy Balance Plot during June 2016

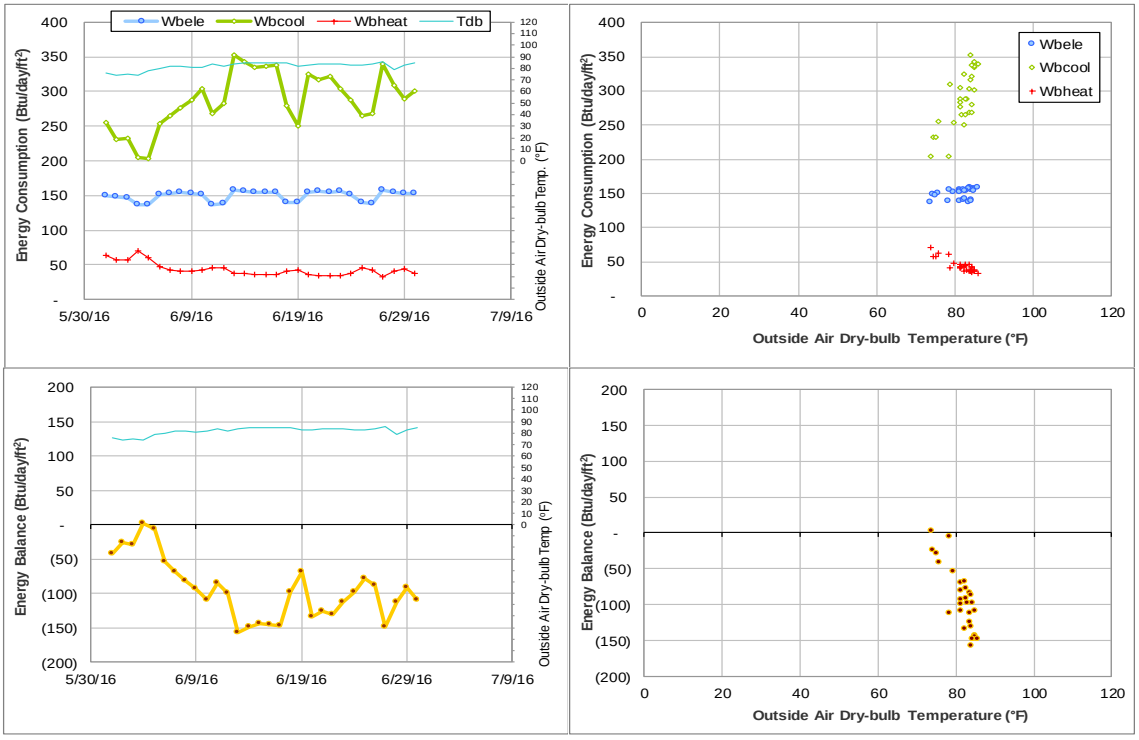


Figure IV-59 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during June 2016

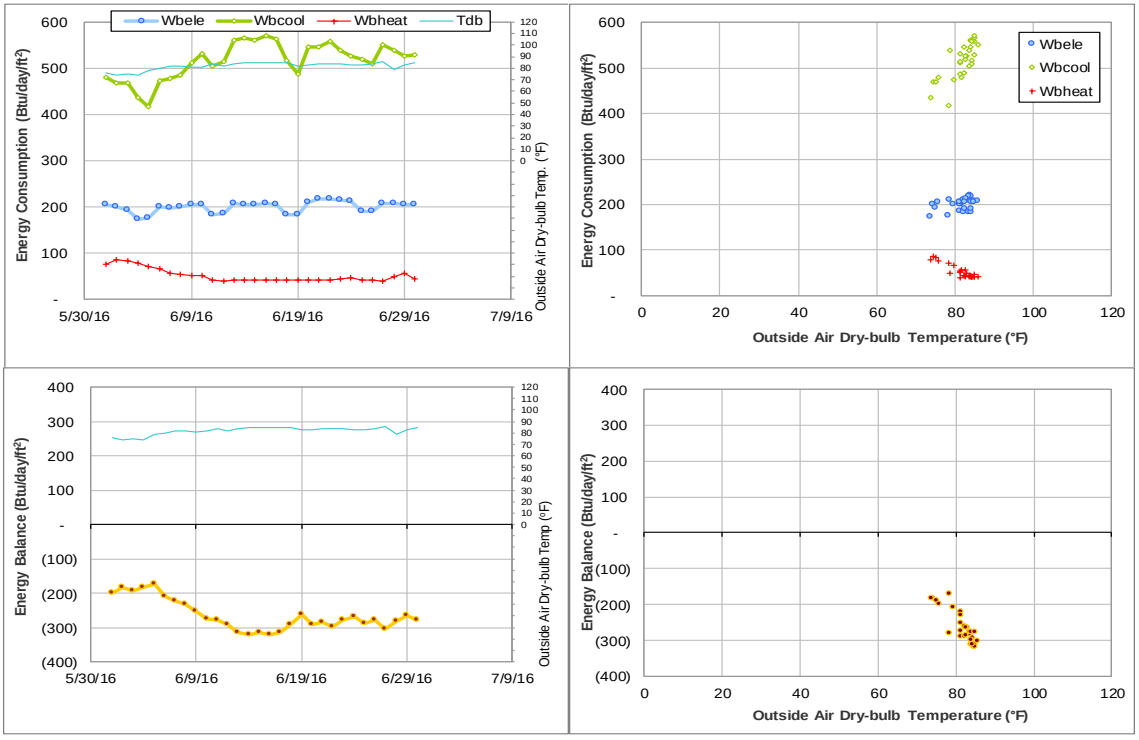


Figure IV-60 Peterson Building TAMU BLDG # 444 Energy Balance Plot during June 2016

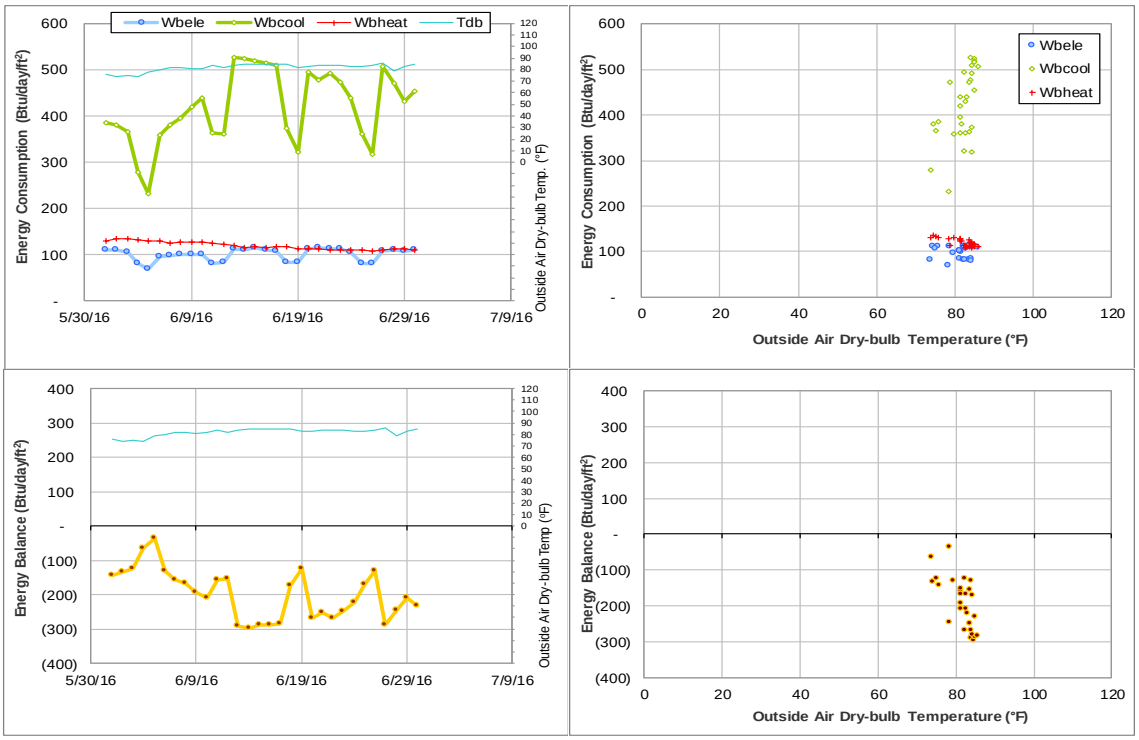


Figure IV-61 Teague Research Center and DPC Annex TAMU BLDG # 445 and 517 Energy Balance Plot during June 2016

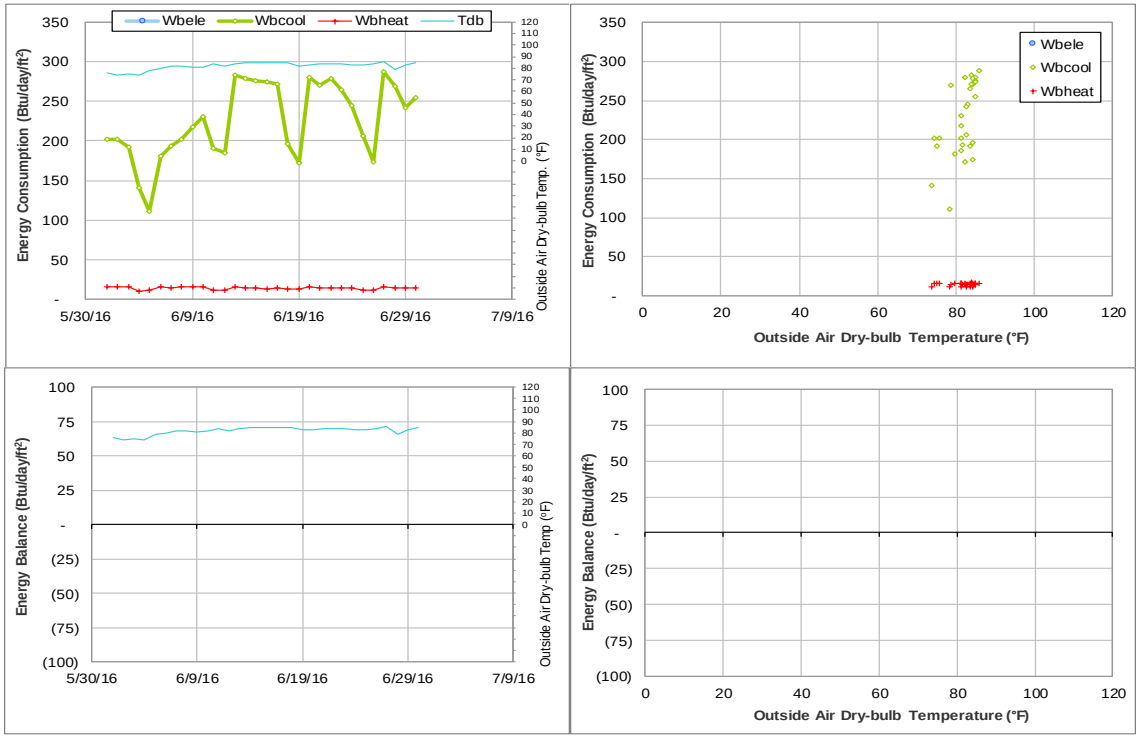


Figure IV-62 Teague Research Center TAMU BLDG # 445 Energy Balance Plot during June 2016

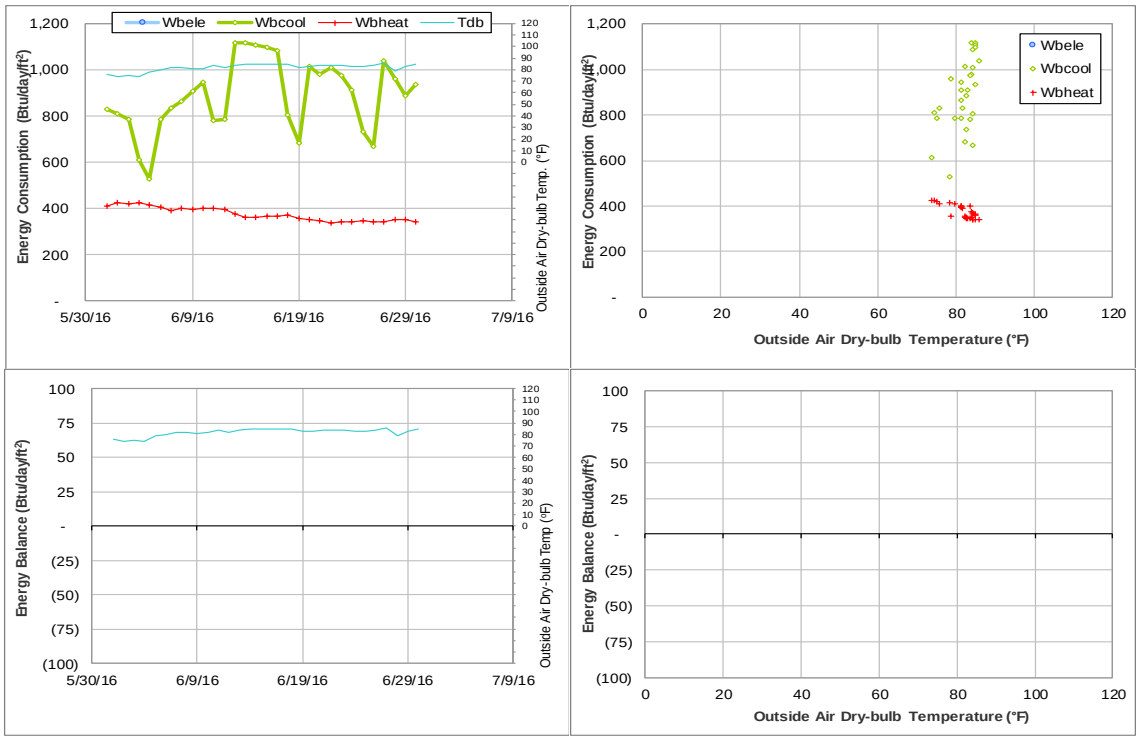


Figure IV-63 DPC Annex TAMU BLDG # 517 Energy Balance Plot during June 2016

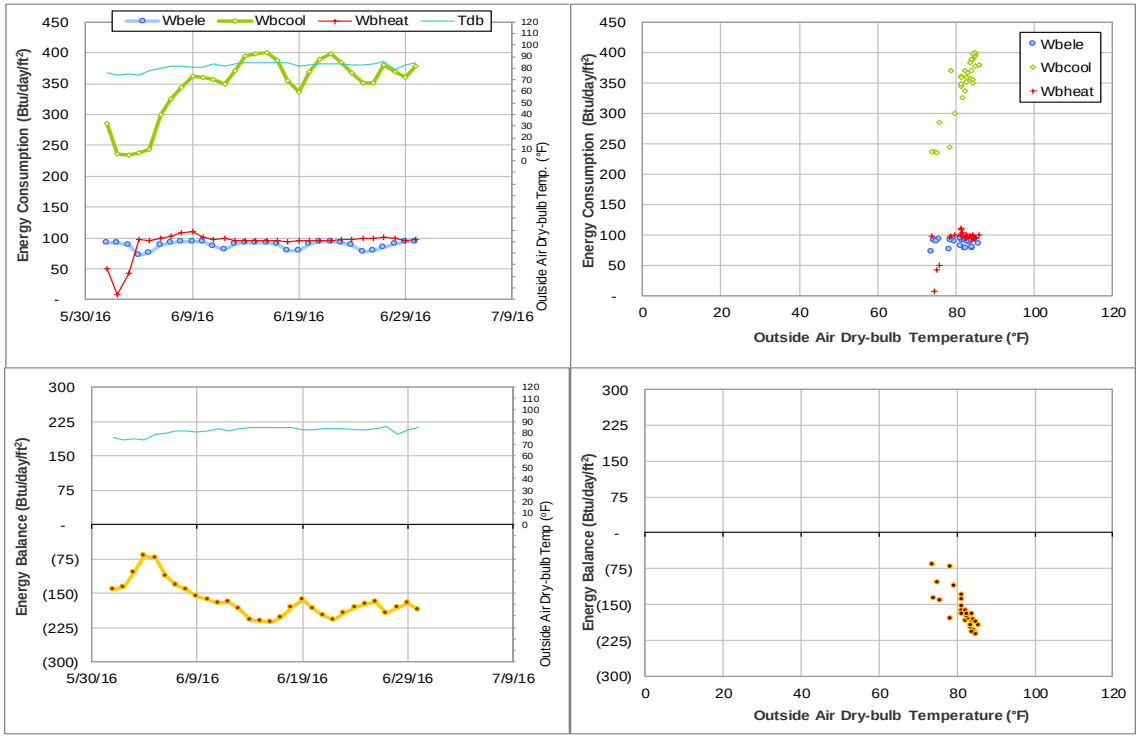


Figure IV-64 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during June 2016

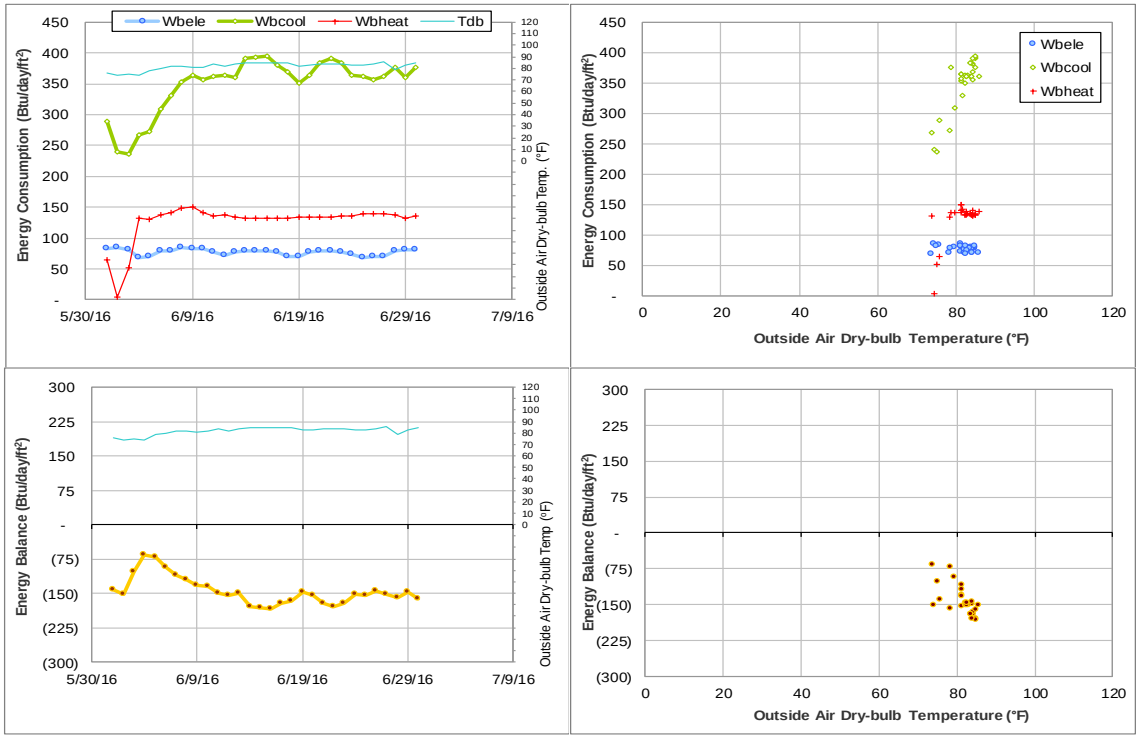


Figure IV-65 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during June 2016

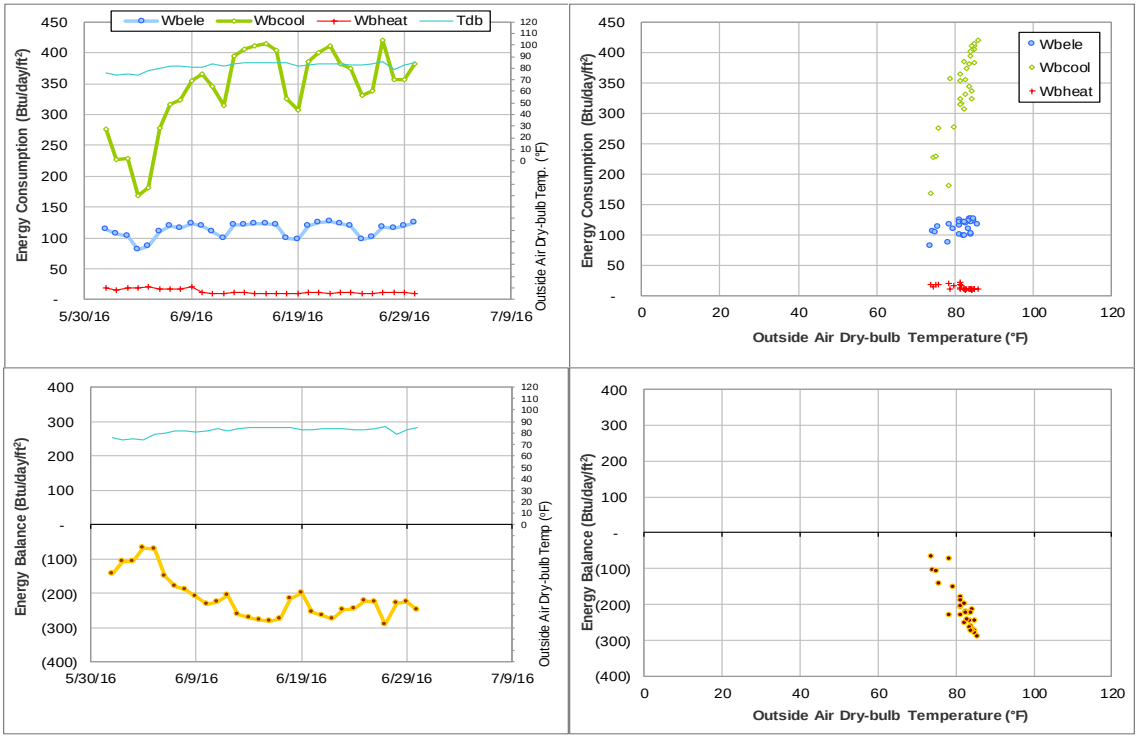


Figure IV-66 Rudder Tower TAMU BLDG # 446 Energy Balance Plot during June 2016

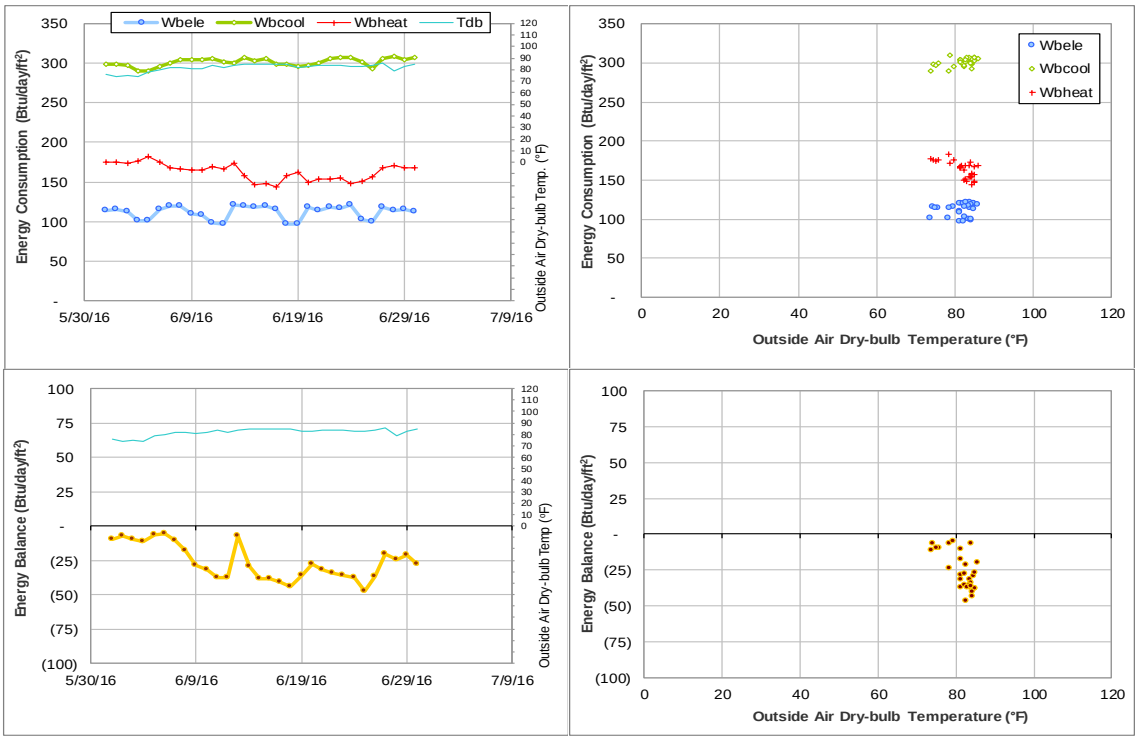


Figure IV-67 Adams Band Hall TAMU BLDG # 448 Energy Balance Plot during June 2016

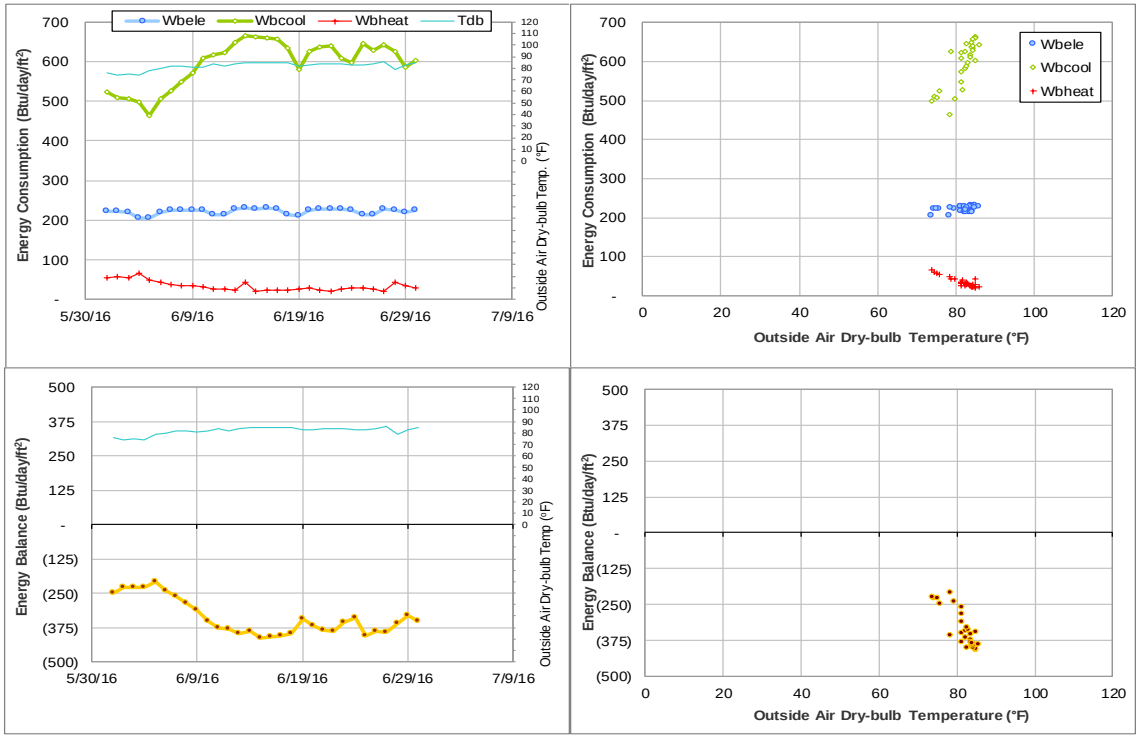


Figure IV-68 Biological Sciences Building - West TAMU BLDG # 449 Energy Balance Plot during June 2016

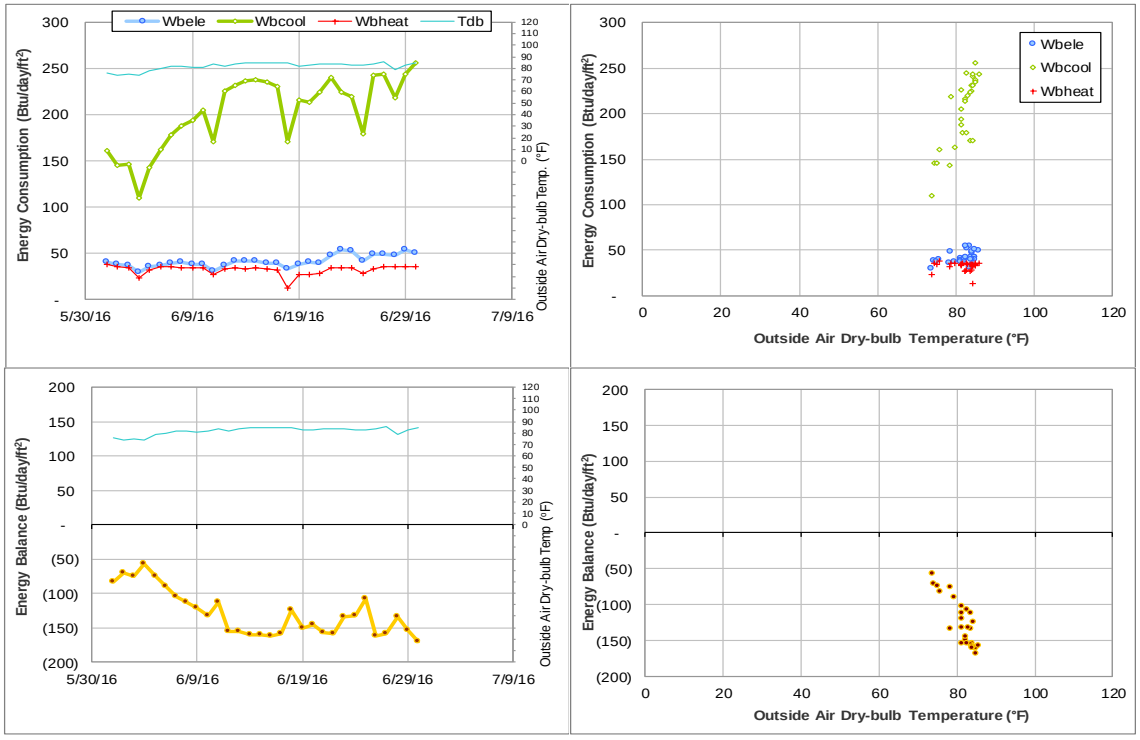


Figure IV-69 Duncan Dining Hall TAMU BLDG # 450 Energy Balance Plot during June 2016

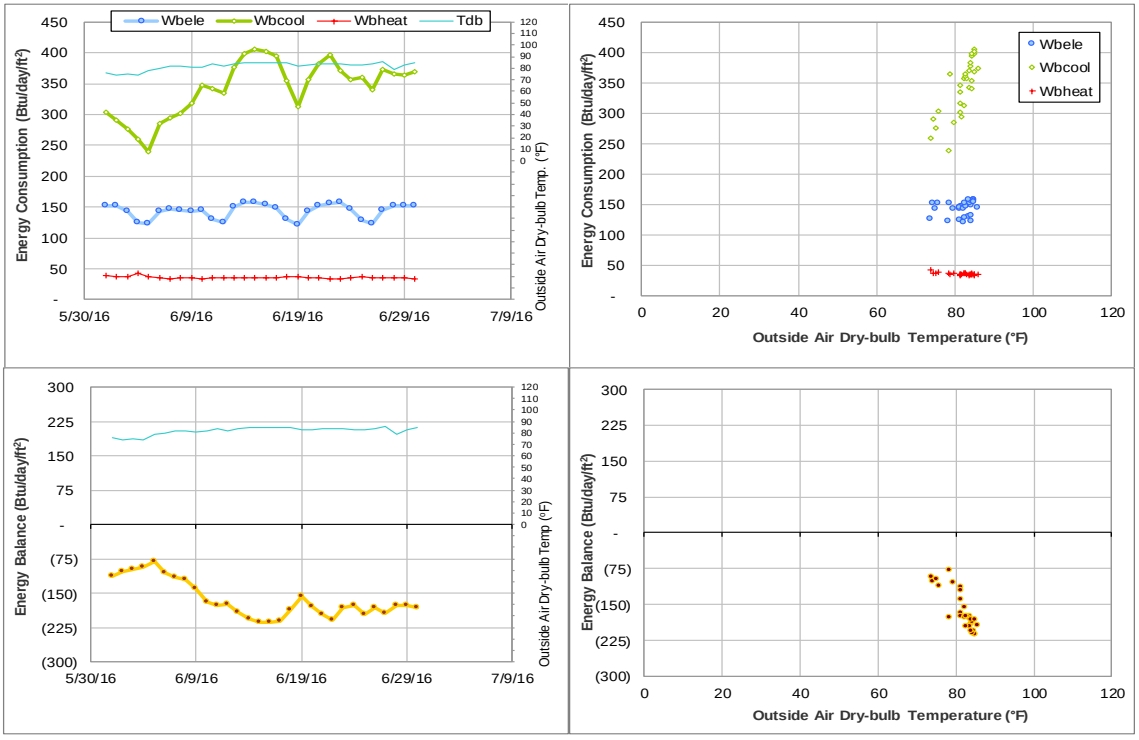


Figure IV-70 MSC TAMU BLDG # 454 Energy Balance Plot during June 2016

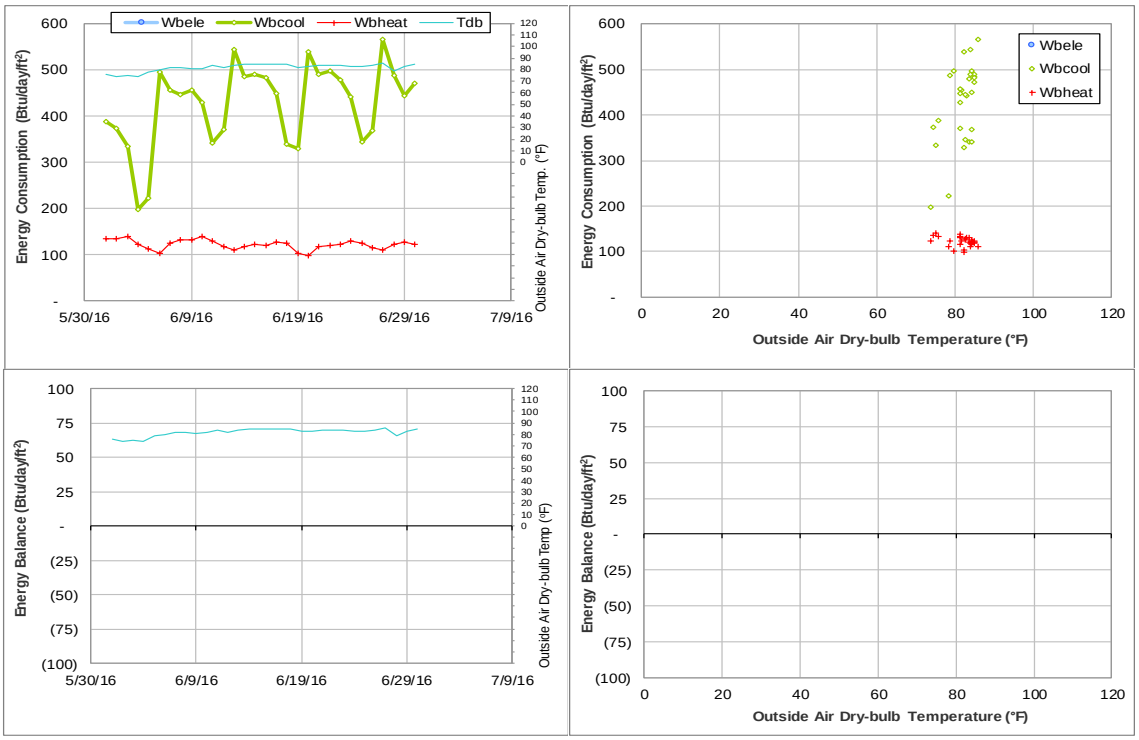


Figure IV-71 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during June 2016

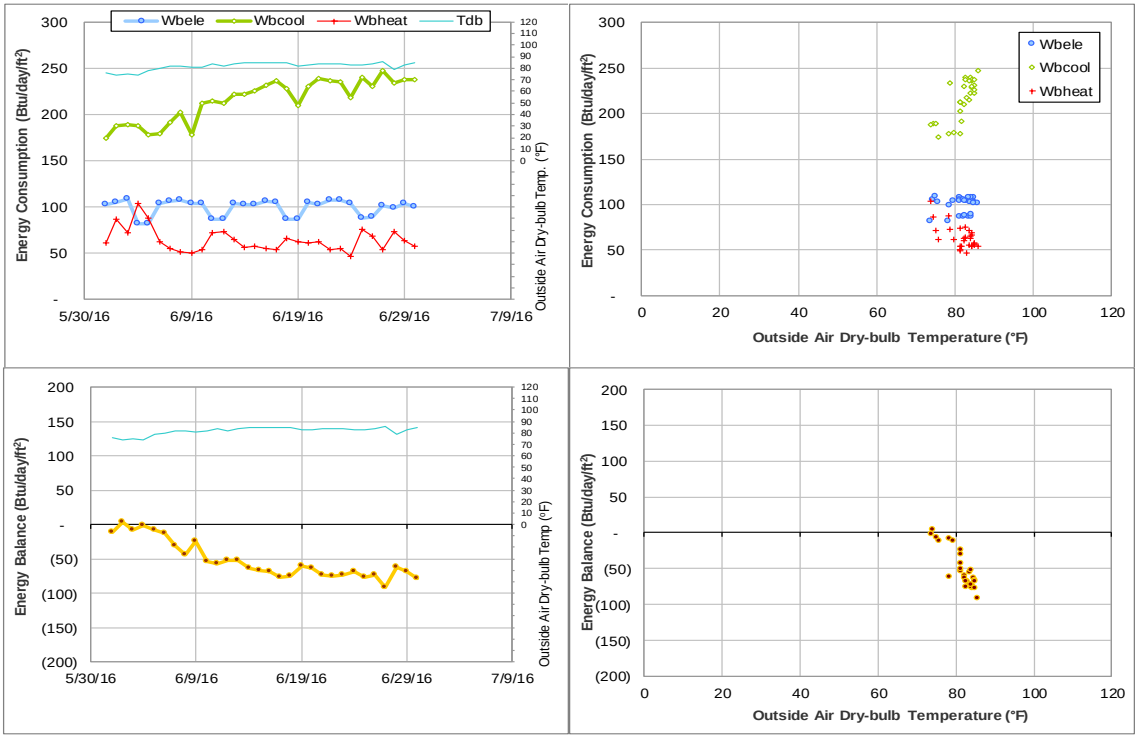


Figure IV-72 TAES Annex Building TAMU BLDG # 457 Energy Balance Plot during June 2016

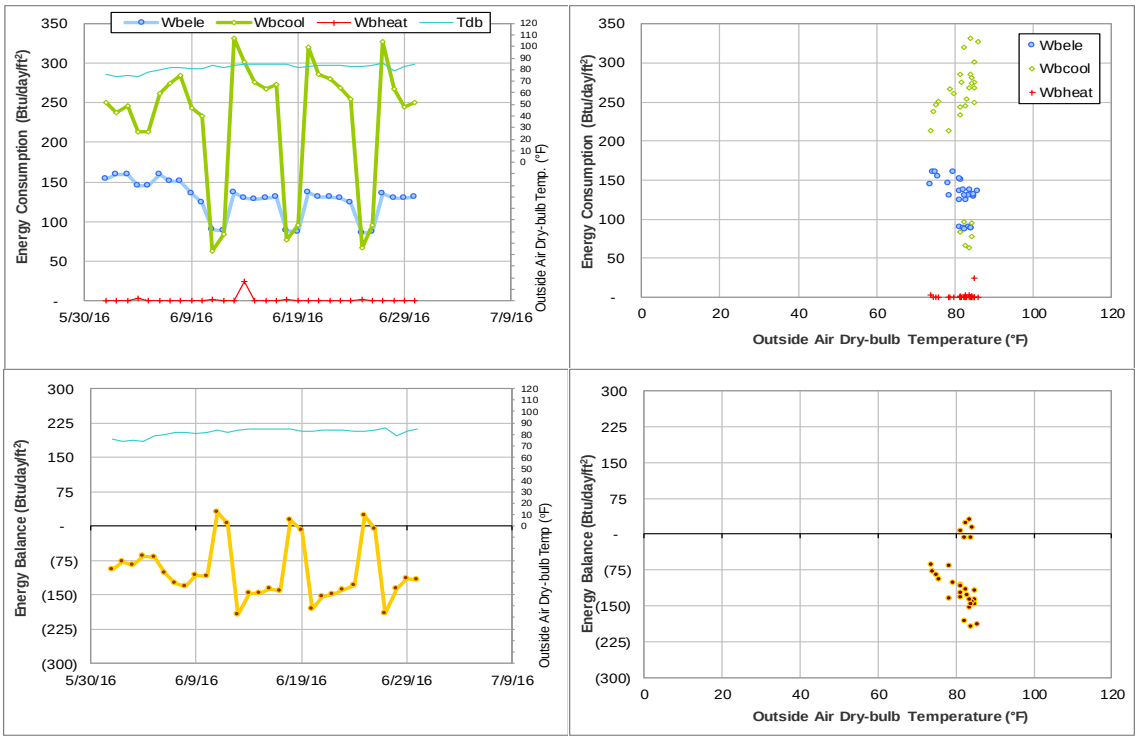


Figure IV-73 Coke Building TAMU BLDG # 461 Energy Balance Plot during June 2016

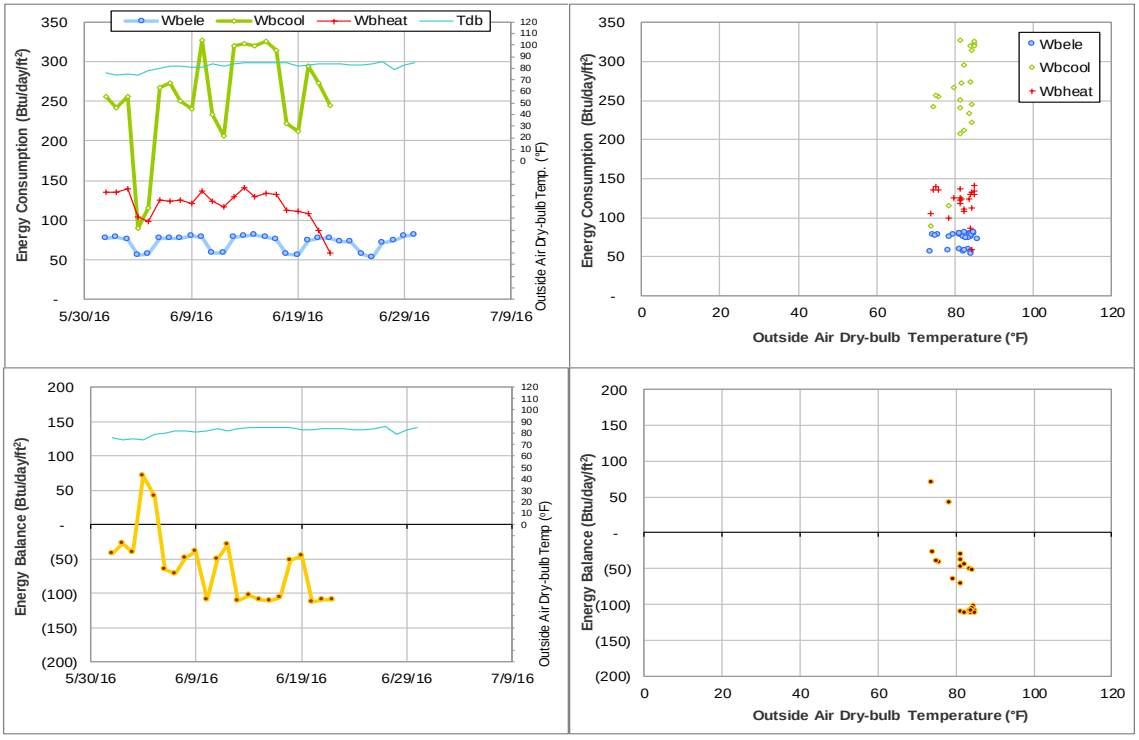


Figure IV-74 Academic Building TAMU BLDG # 462 Energy Balance Plot during June 2016

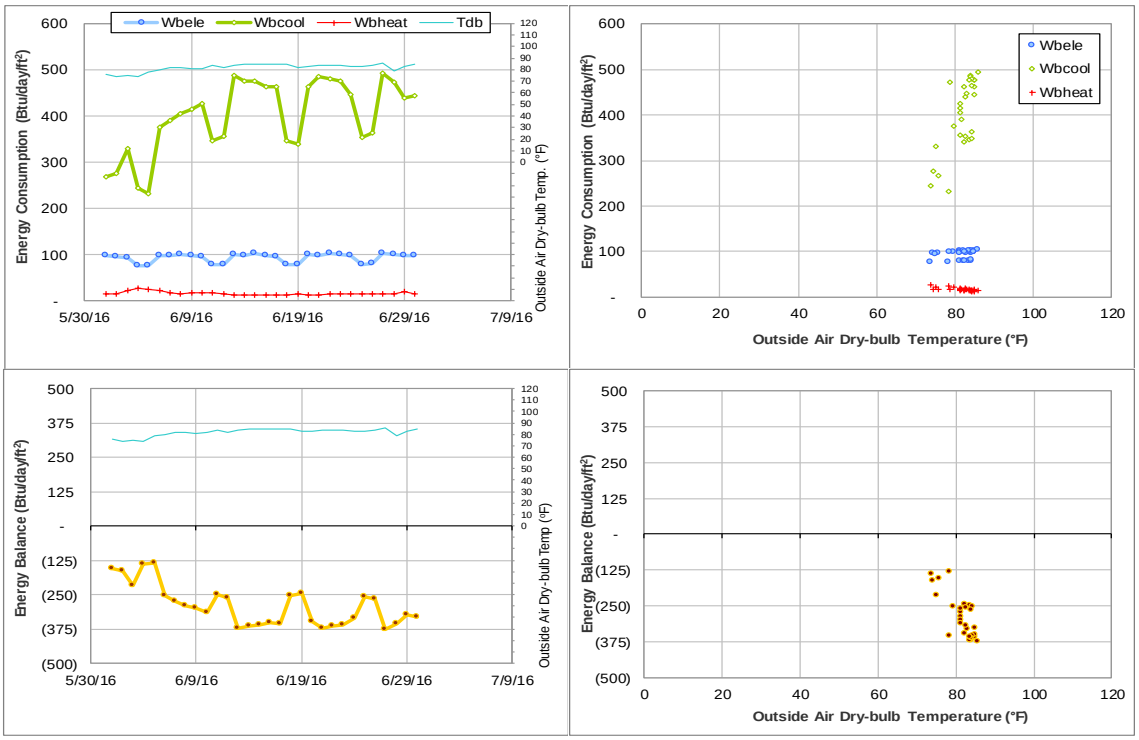


Figure IV-75 Psychology Building TAMU BLDG # 463 Energy Balance Plot during June 2016

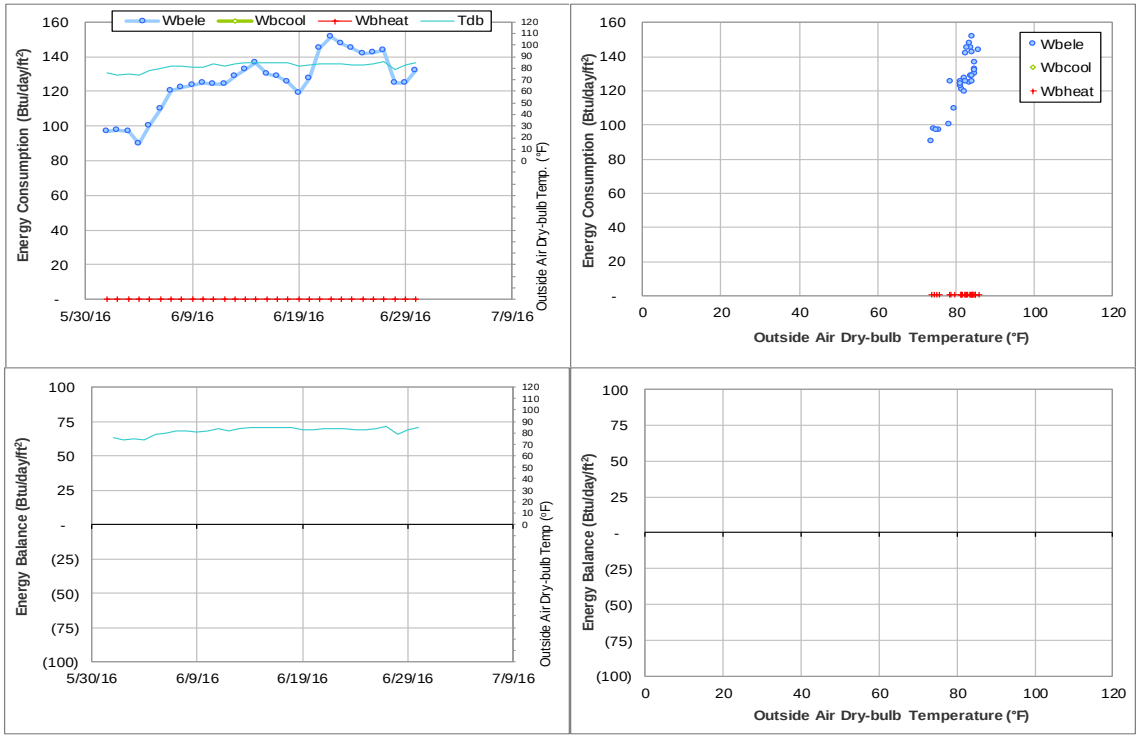


Figure IV-76 State Chemist Building TAMU BLDG # 464 Energy Balance Plot during June 2016

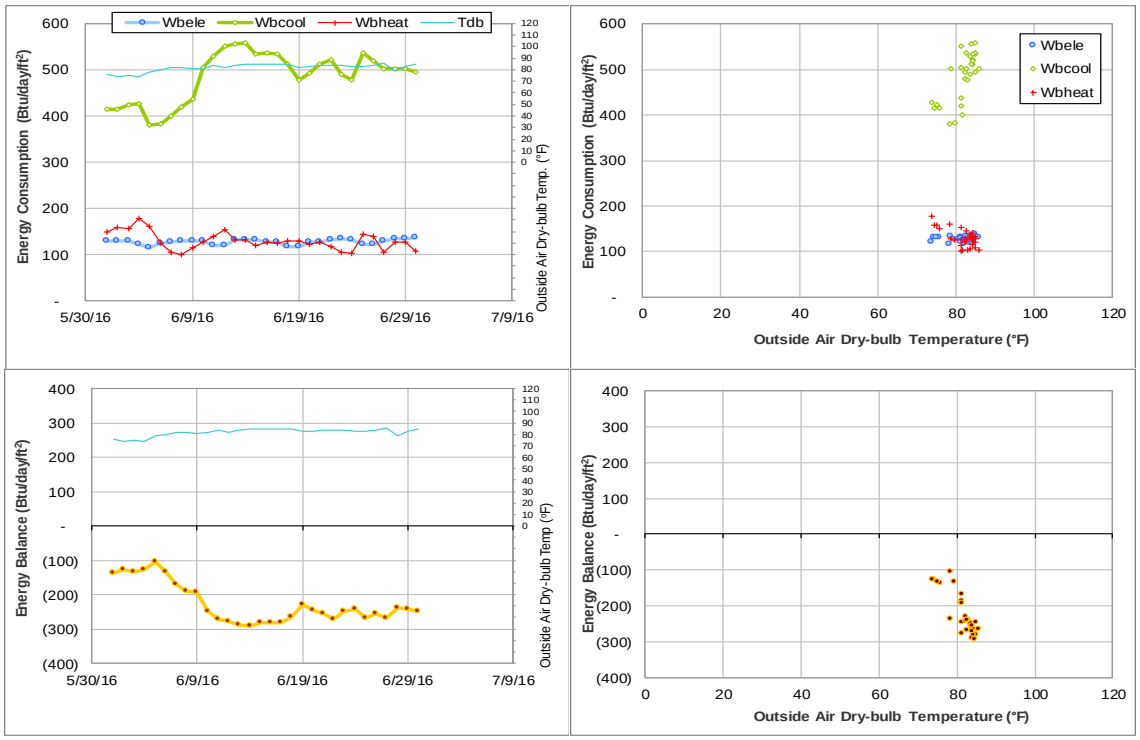


Figure IV-77 Butler Hall TAMU BLDG # 465 Energy Balance Plot during June 2016

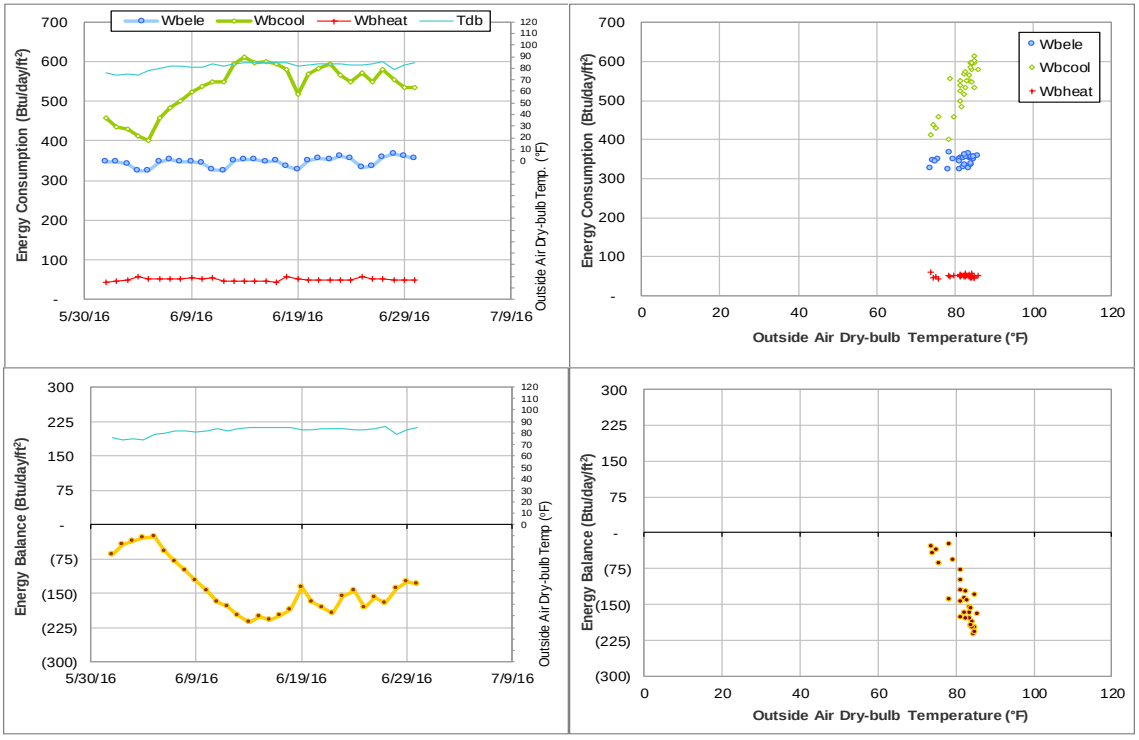


Figure IV-78 Biological Sciences Building - East TAMU BLDG # 467 Energy Balance Plot during June 2016

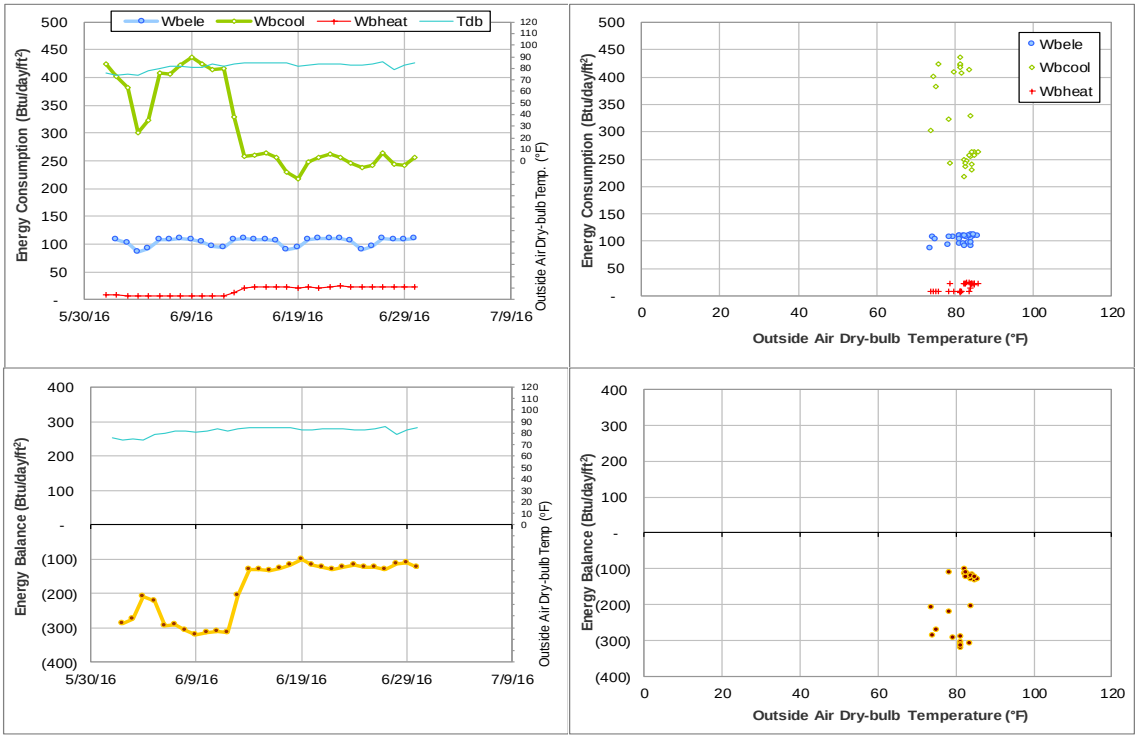


Figure IV-79 Evans Library TAMU BLDG # 468 Energy Balance Plot during June 2016

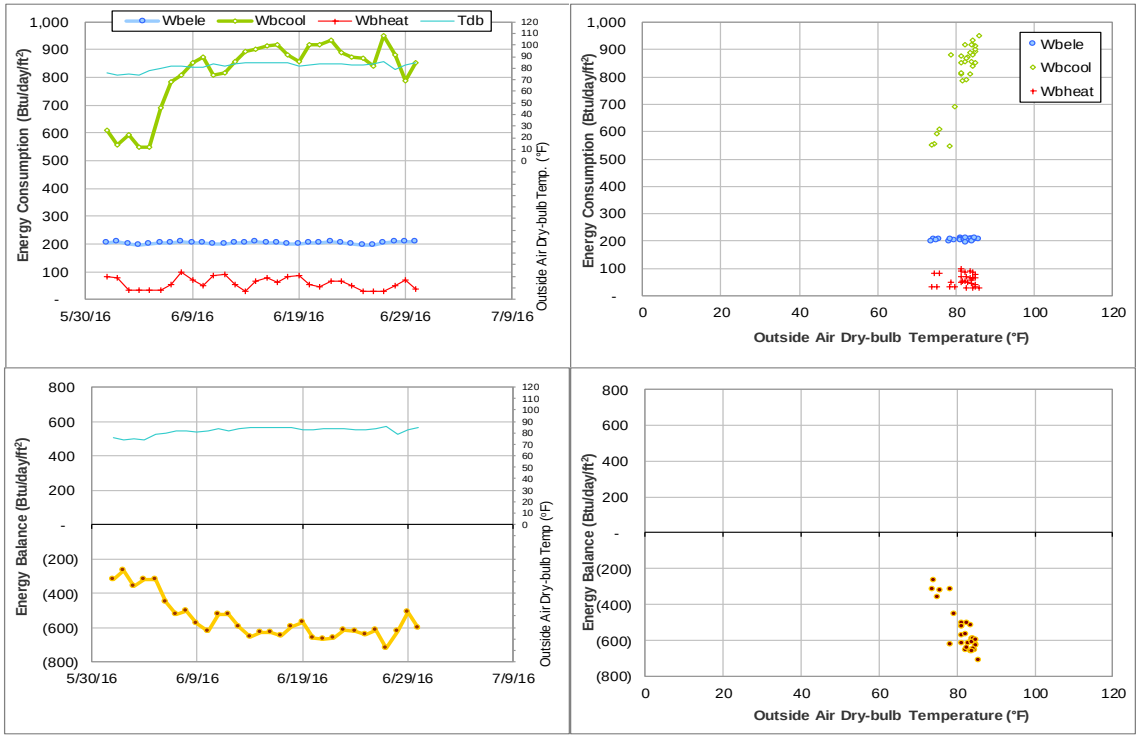


Figure IV-80 Central Campus Parking Garage TAMU BLDG # 469 Energy Balance Plot during June 2016

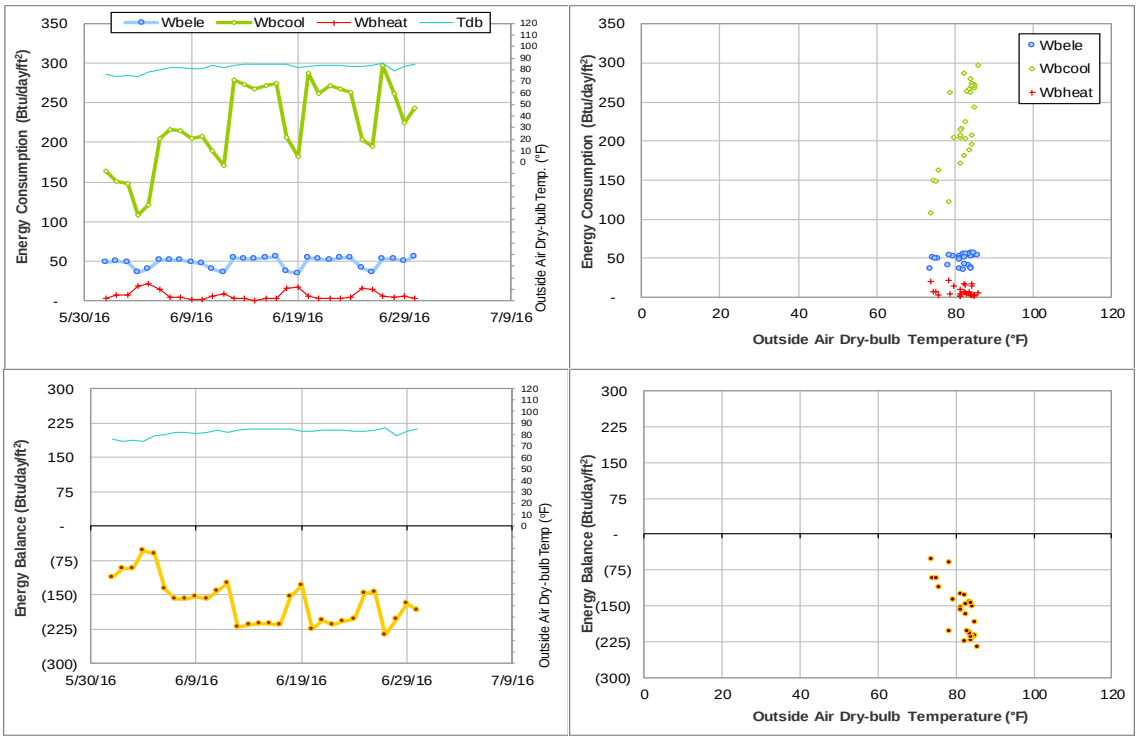


Figure IV-81 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during June 2016

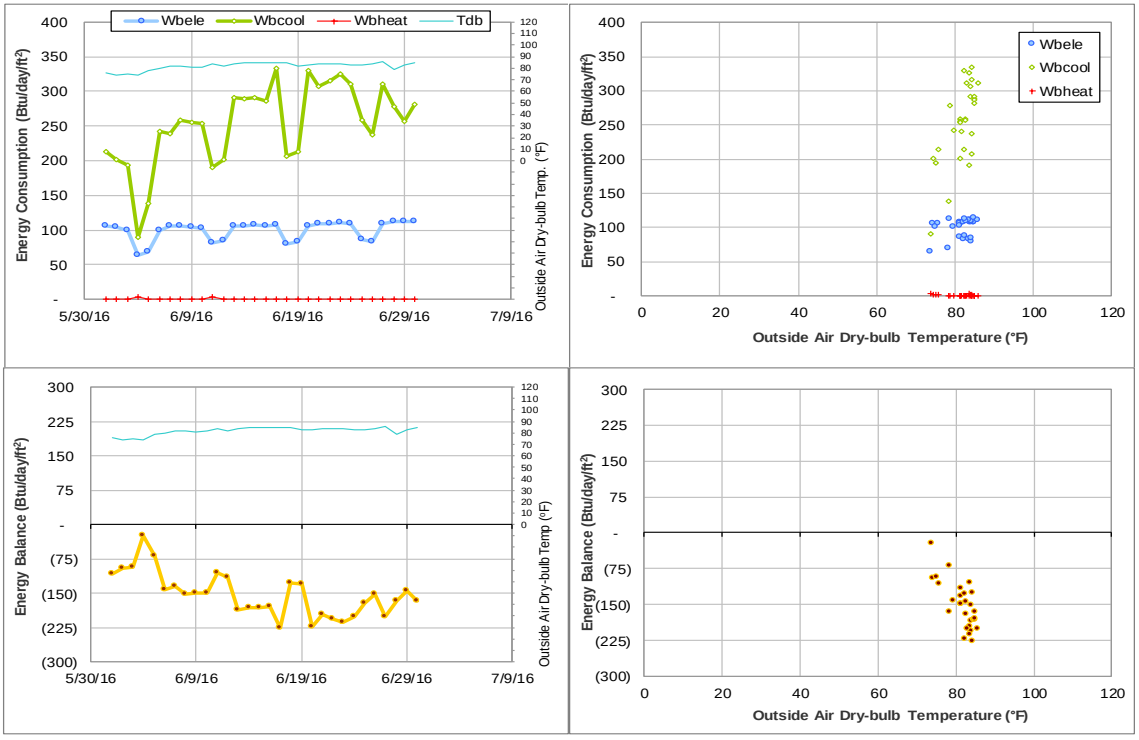


Figure IV-82 Pavilion TAMU BLDG # 471 Energy Balance Plot during June 2016

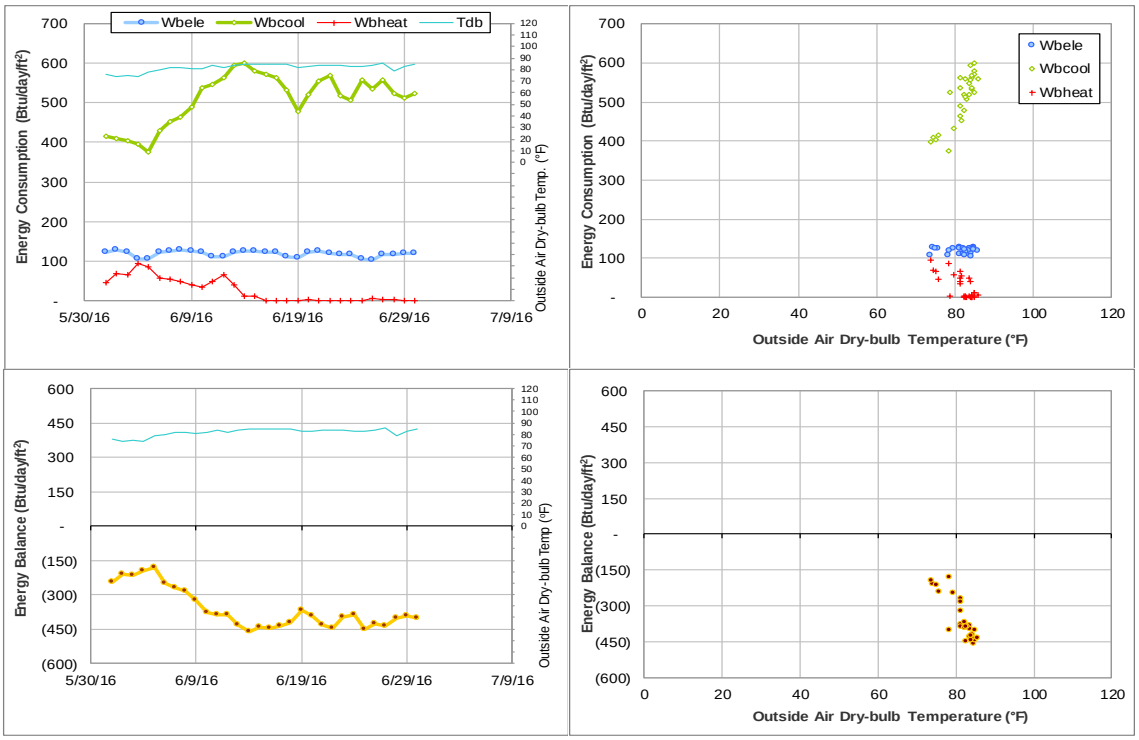


Figure IV-83 Animal Industries TAMU BLDG # 472 Energy Balance Plot during June 2016

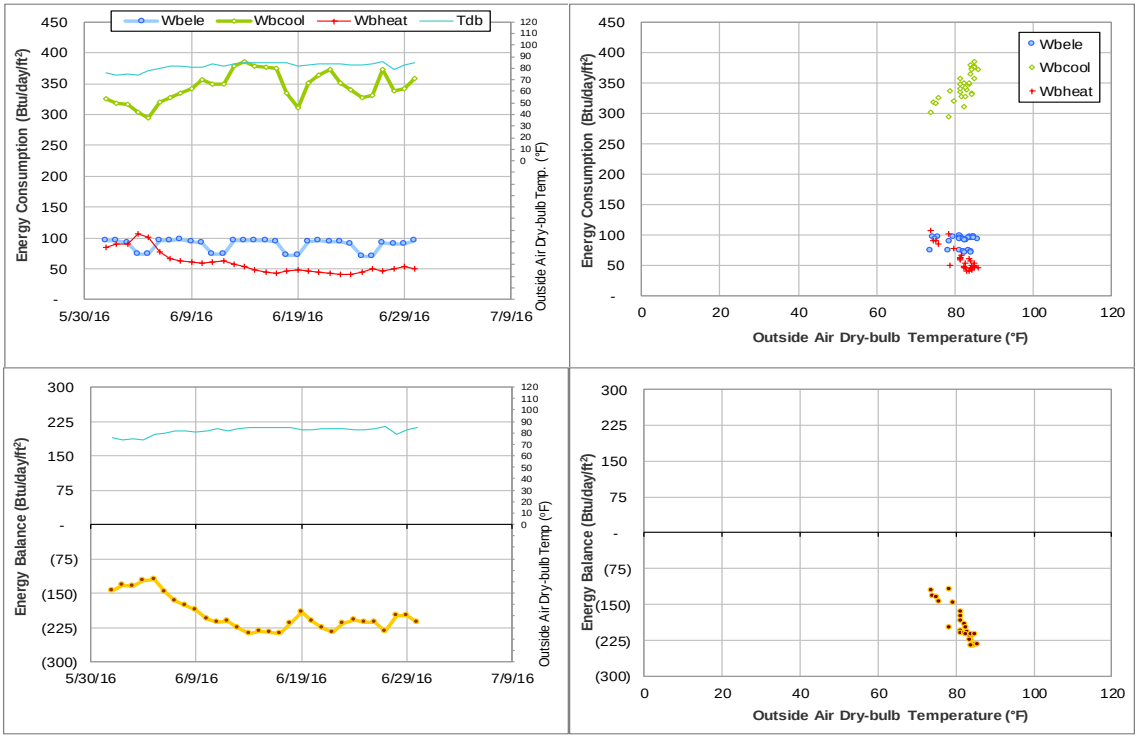


Figure IV-84 Williams Administration Building TAMU BLDG # 473 Energy Balance Plot during June 2016

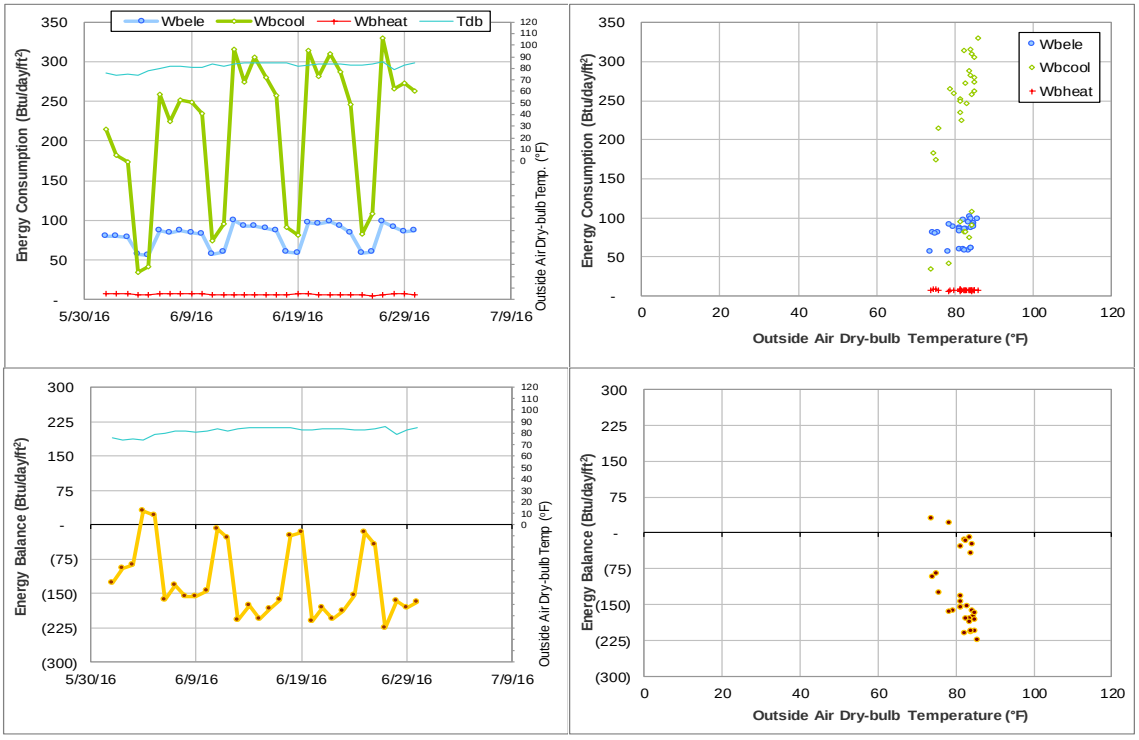


Figure IV-85 YMCA Building TAMU BLDG # 474 Energy Balance Plot during June 2016

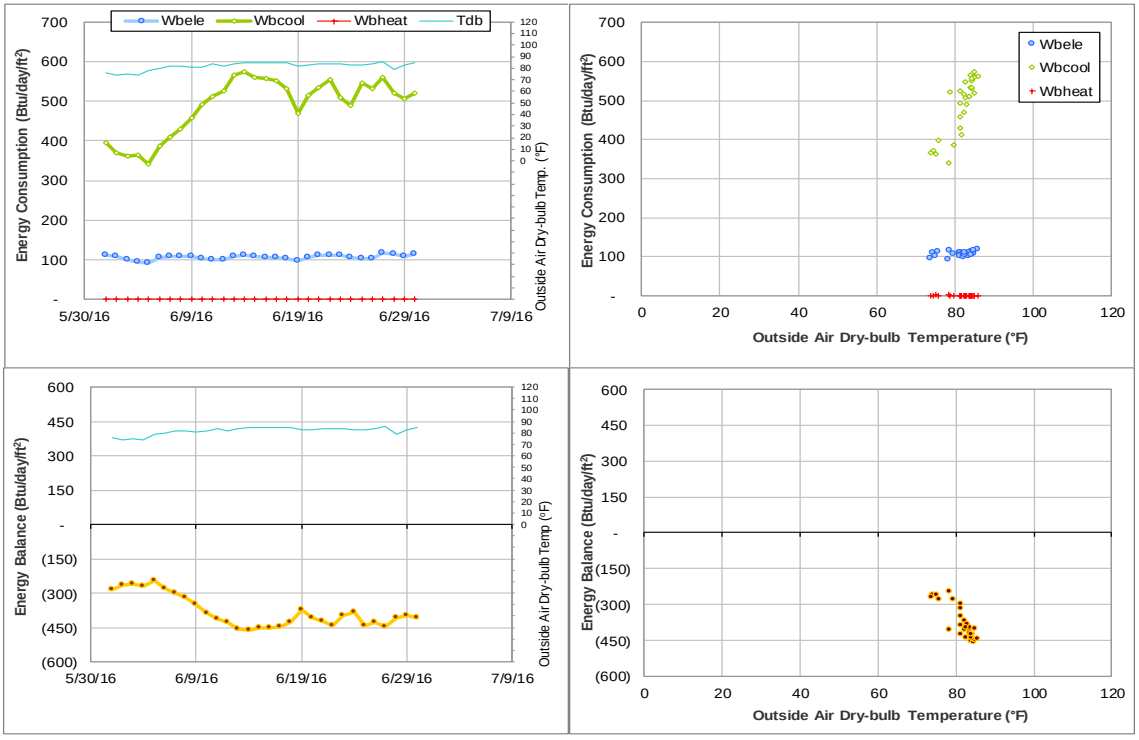


Figure IV-86 Francis Hall TAMU BLDG # 476 Energy Balance Plot during June 2016

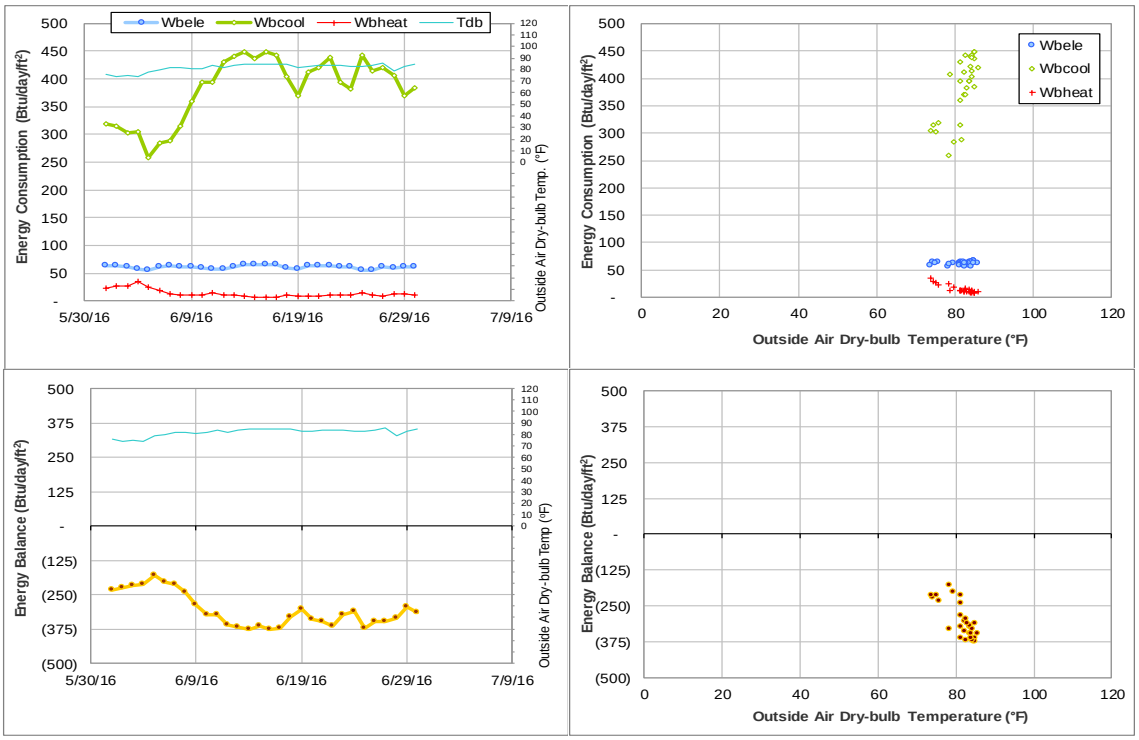


Figure IV-87 Anthropology Building TAMU BLDG # 477 Energy Balance Plot during June 2016

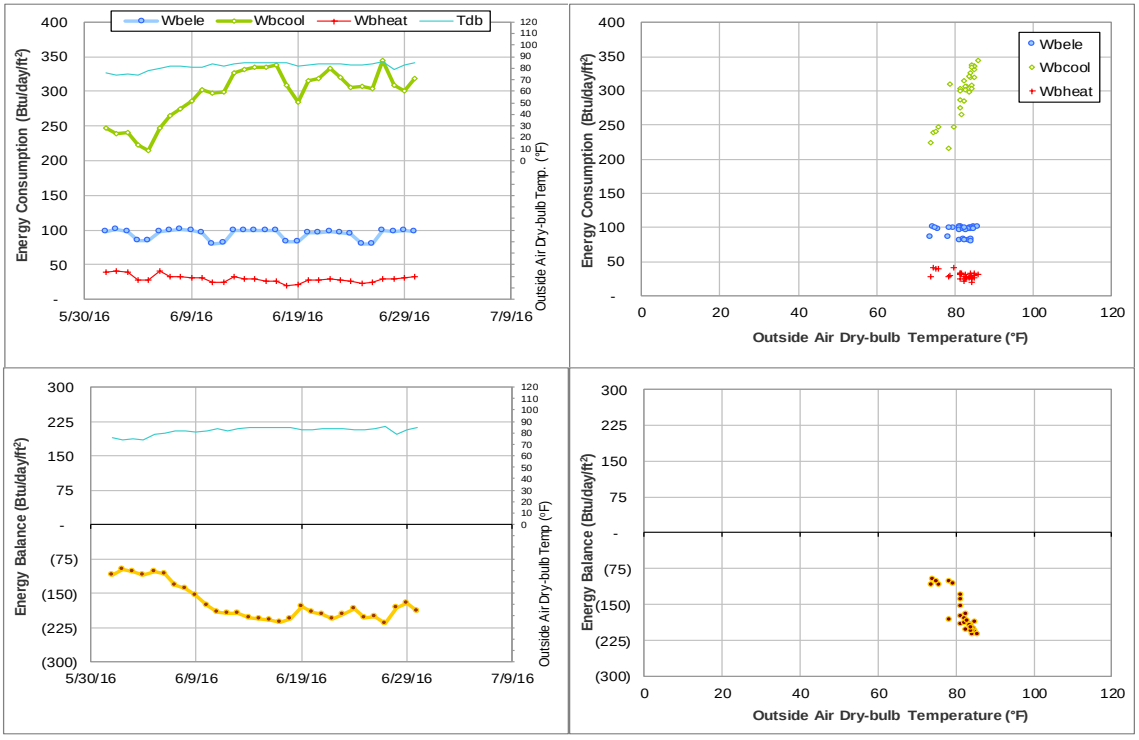


Figure IV-88 Scoates Hall TAMU BLDG # 478 Energy Balance Plot during June 2016

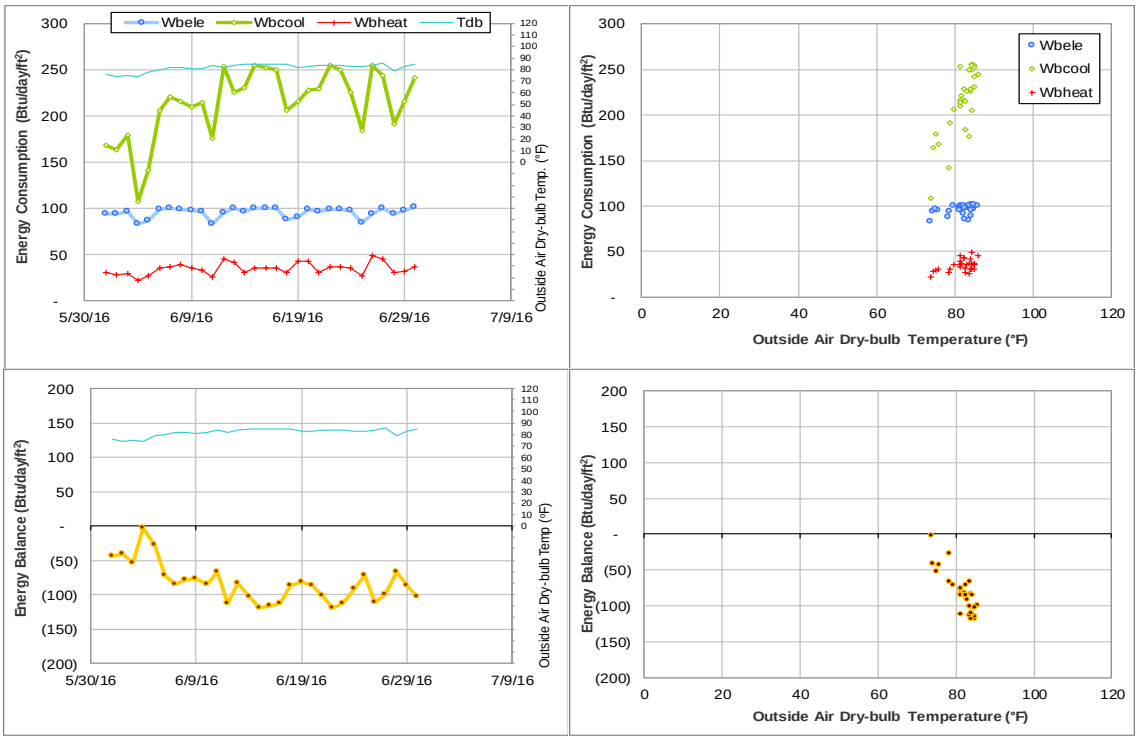


Figure IV-89 Bolton Hall TAMU BLDG # 480 Energy Balance Plot during June 2016

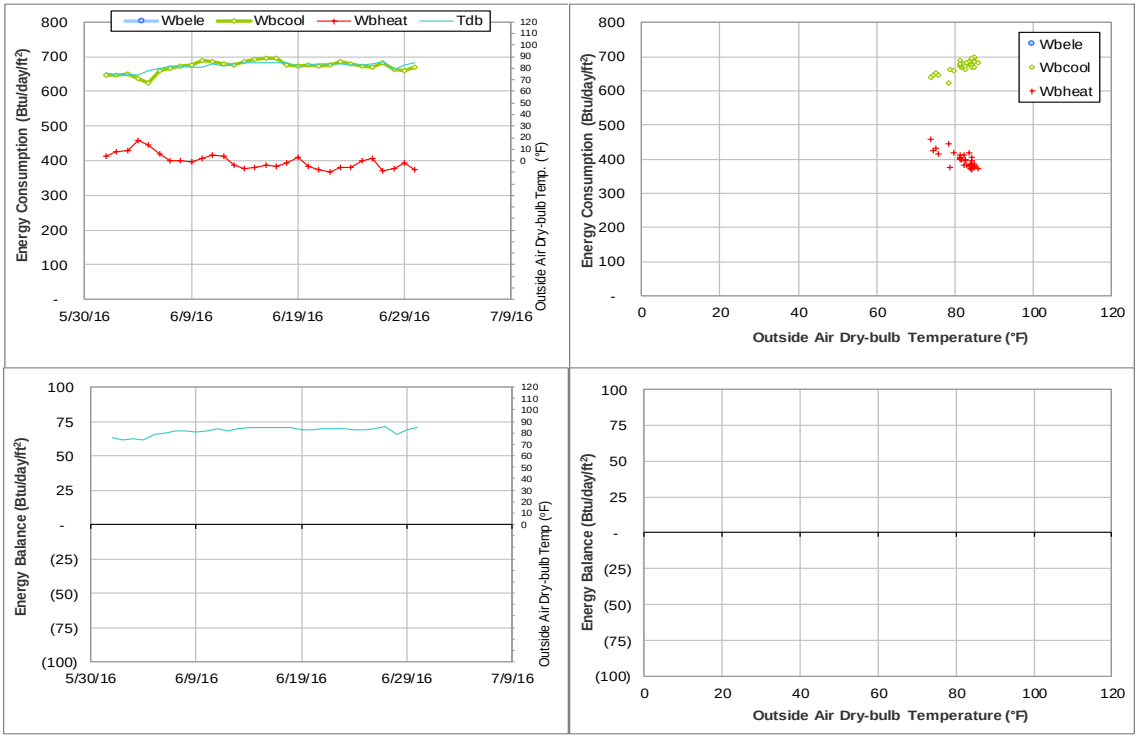


Figure IV-90 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during June 2016

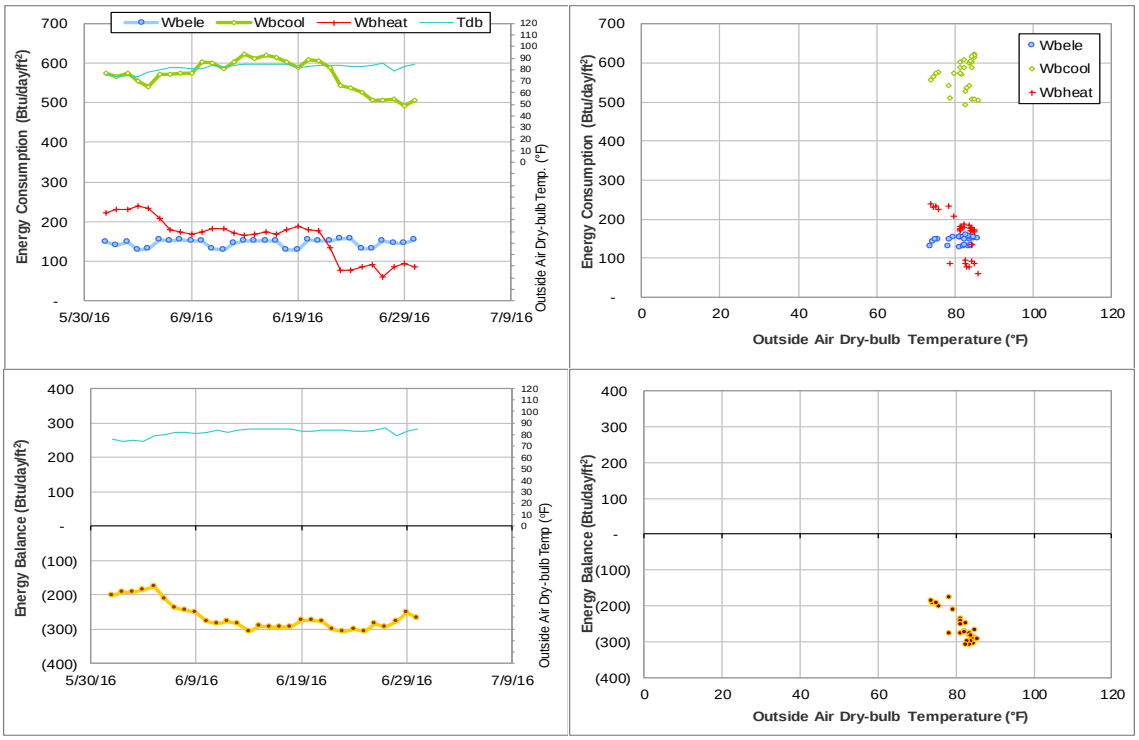


Figure IV-91 Fermier Hall TAMU BLDG # 482 Energy Balance Plot during June 2016

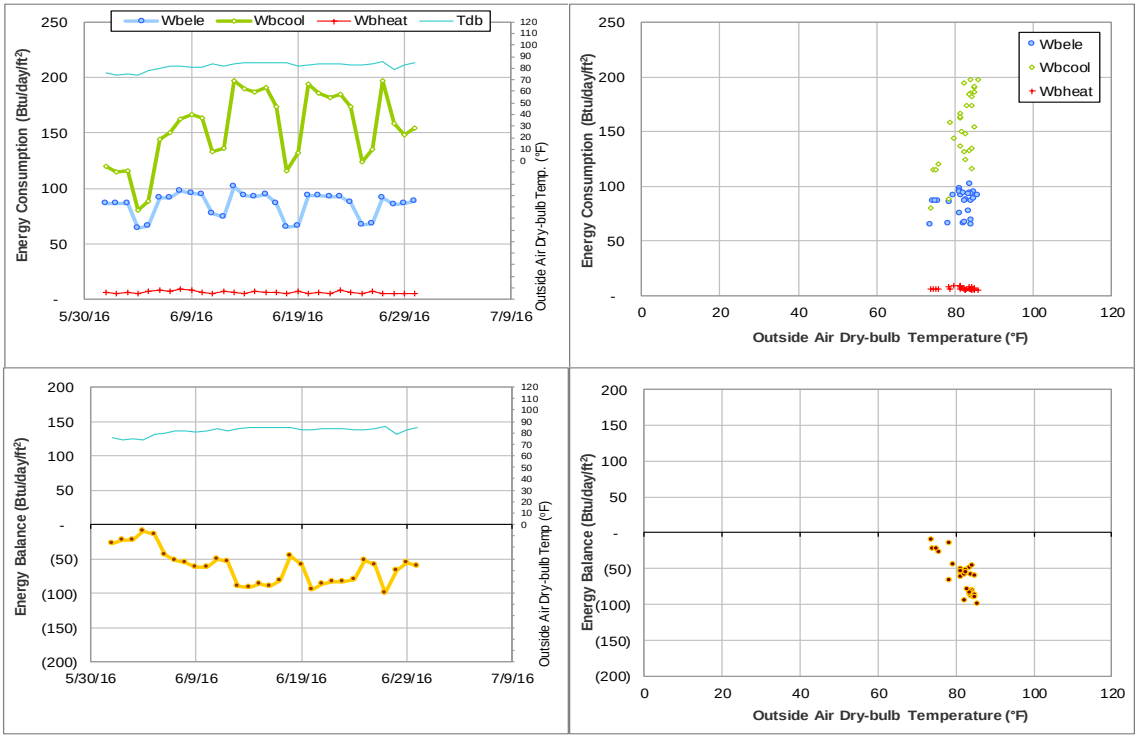


Figure IV-92 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during June 2016

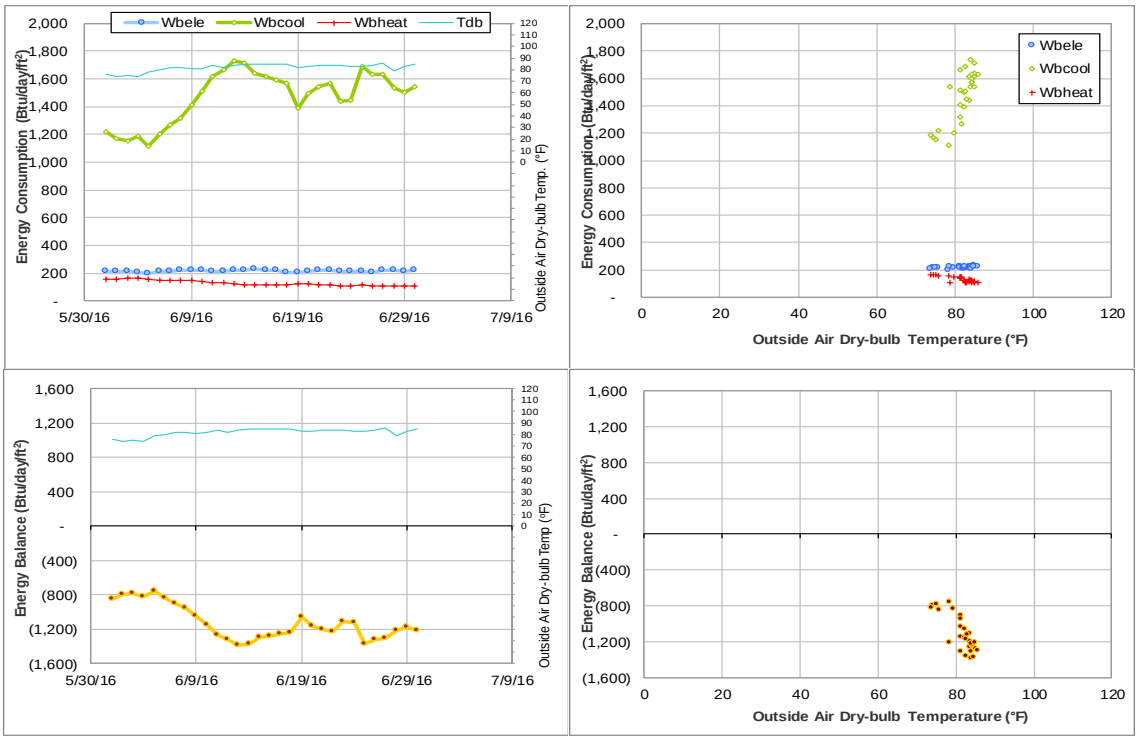


Figure IV-93 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during June 2016

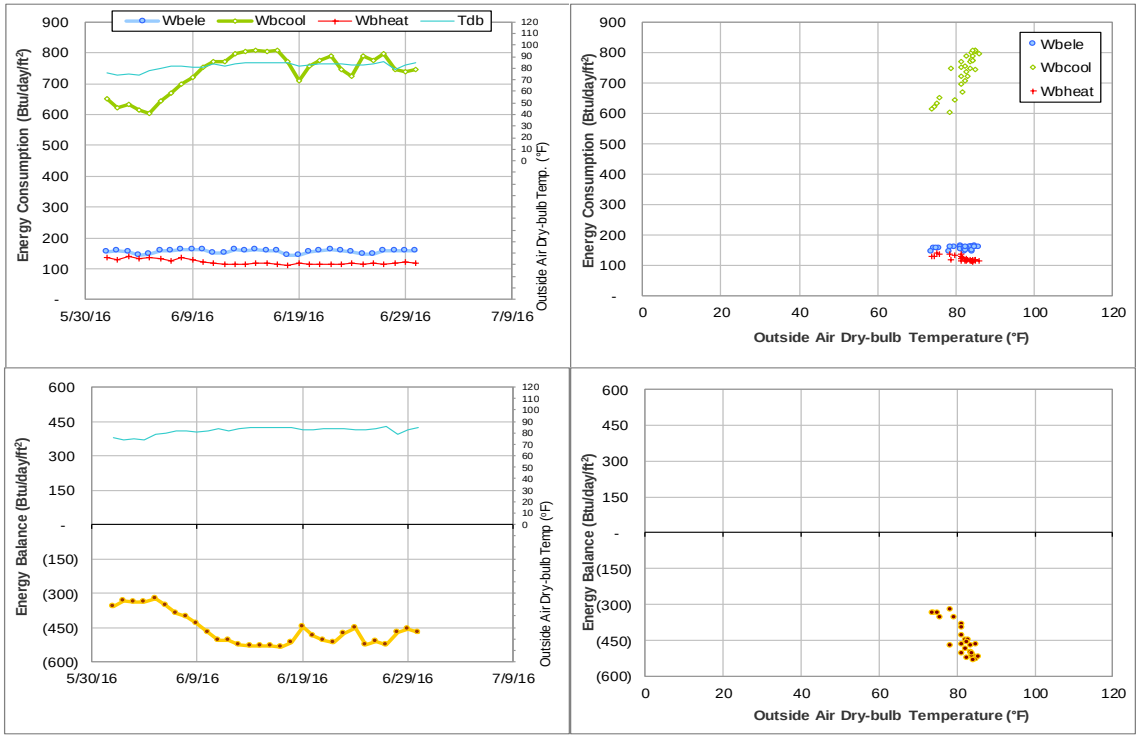


Figure IV-94 Halbouty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during June 2016

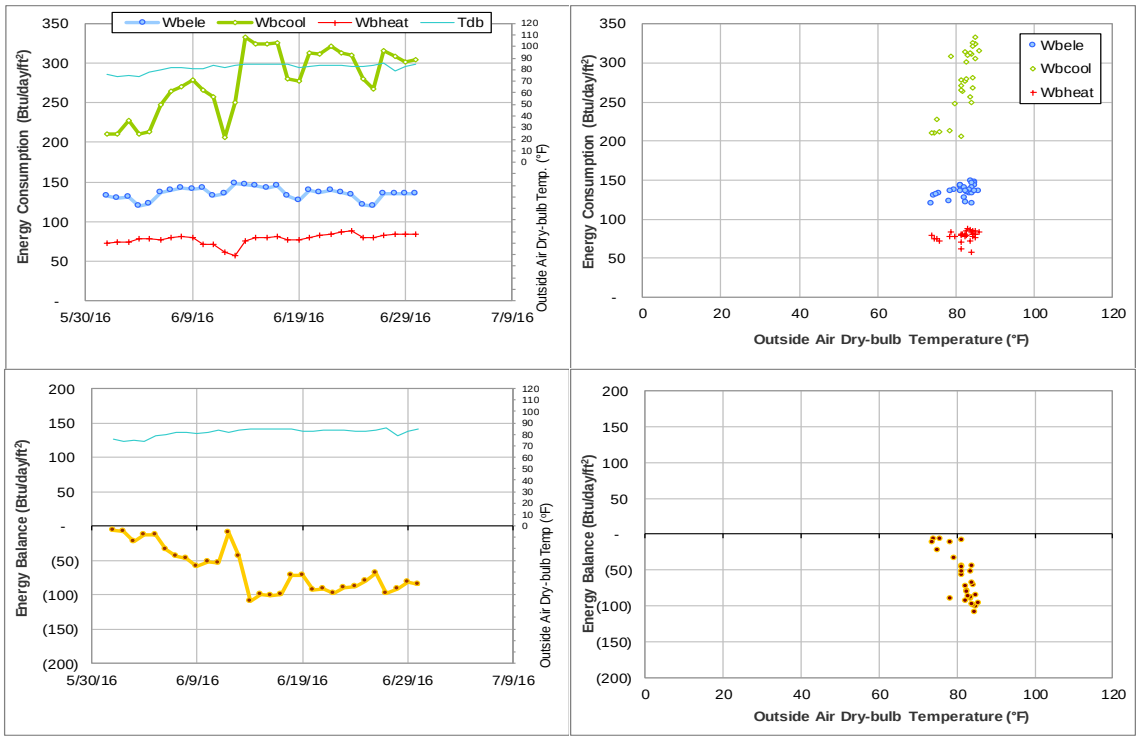


Figure IV-95 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during June 2016

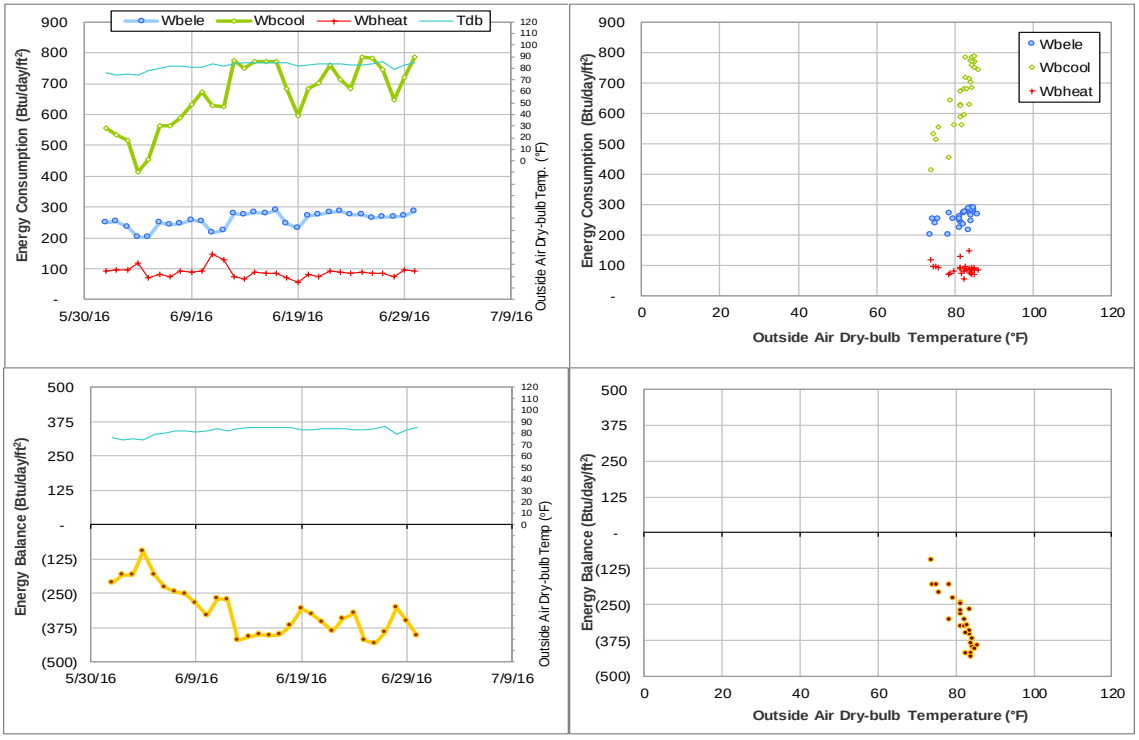


Figure IV-96 Sbisa Dining Hall TAMU BLDG # 495 Energy Balance Plot during June 2016

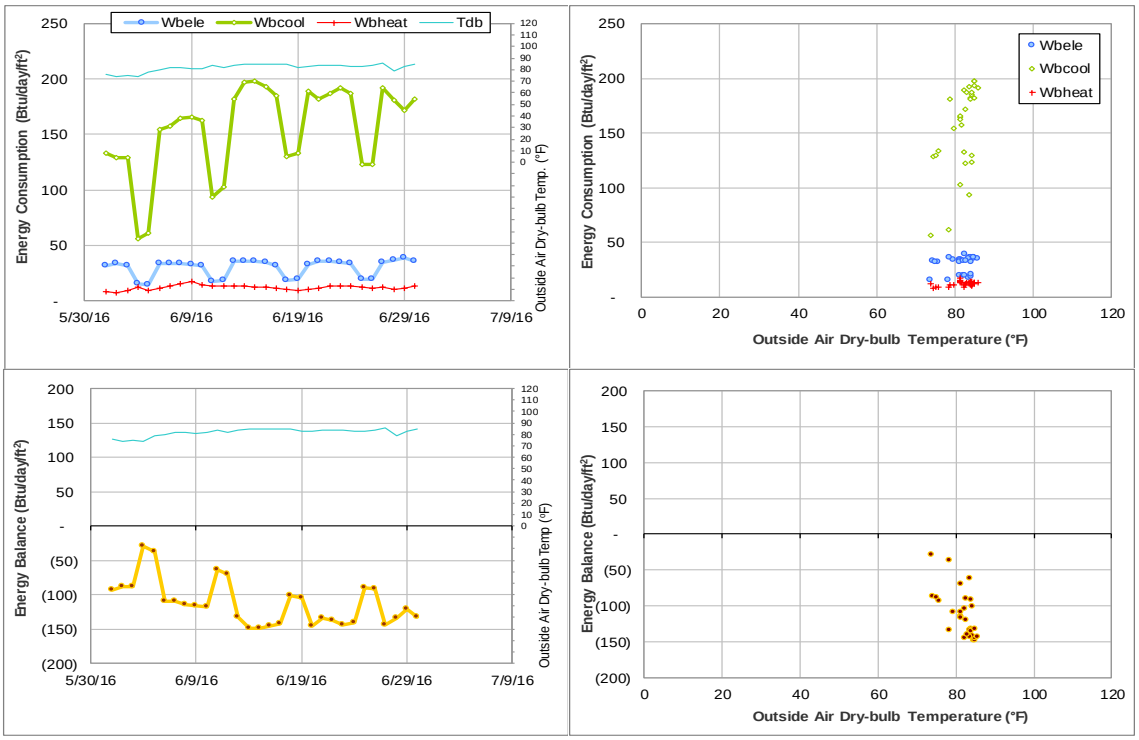


Figure IV-97 Utilities & Energy Services Central Office TAMU BLDG # 496 Energy Balance Plot during June 2016

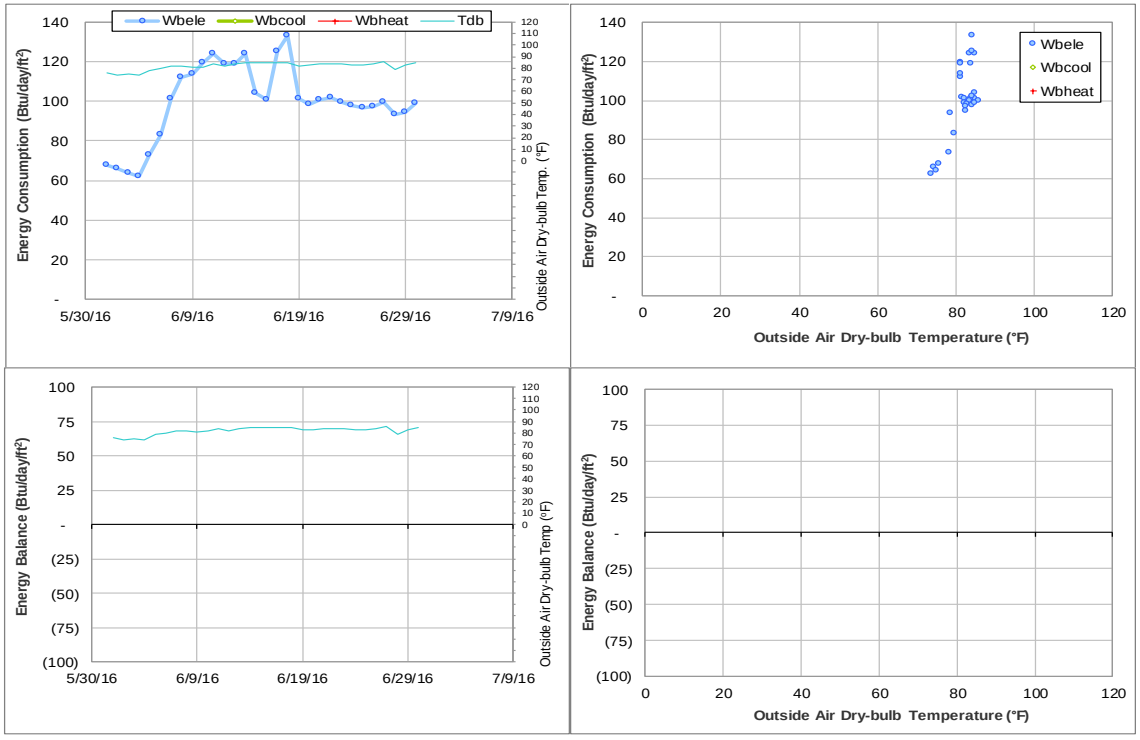


Figure IV-98 Concrete Materials Laboratory TAMU BLDG # 501 Energy Balance Plot during June 2016

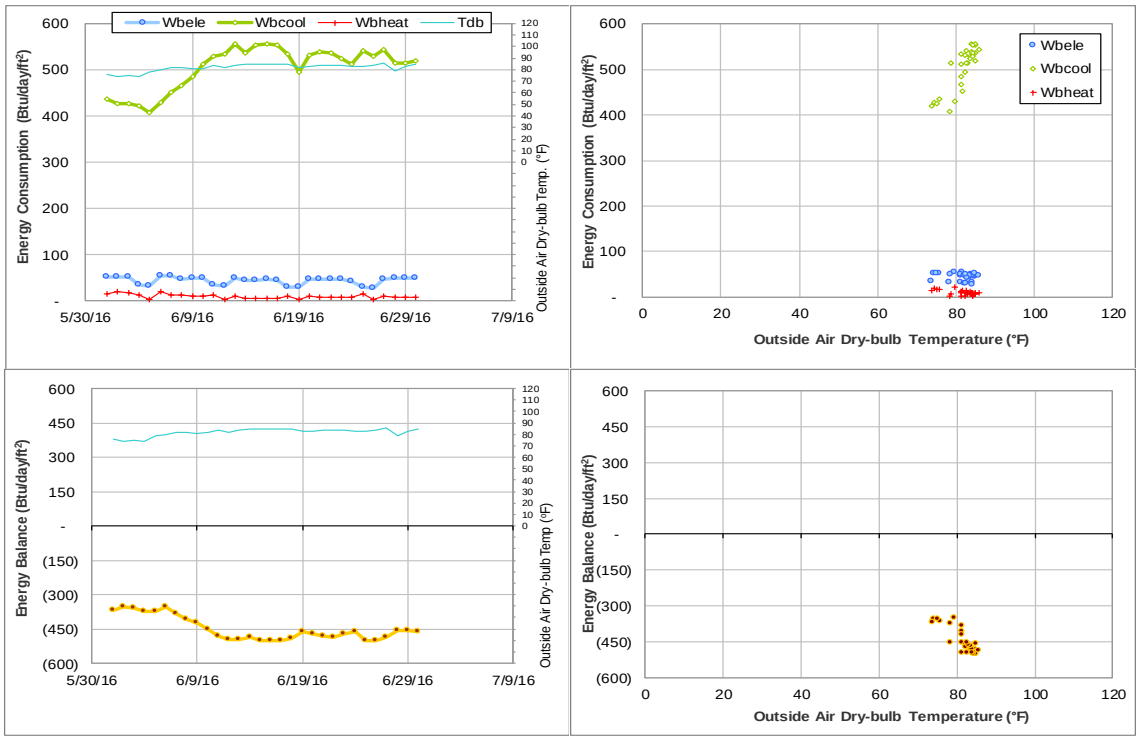


Figure IV-99 Nagle Hall TAMU BLDG # 506 Energy Balance Plot during June 2016

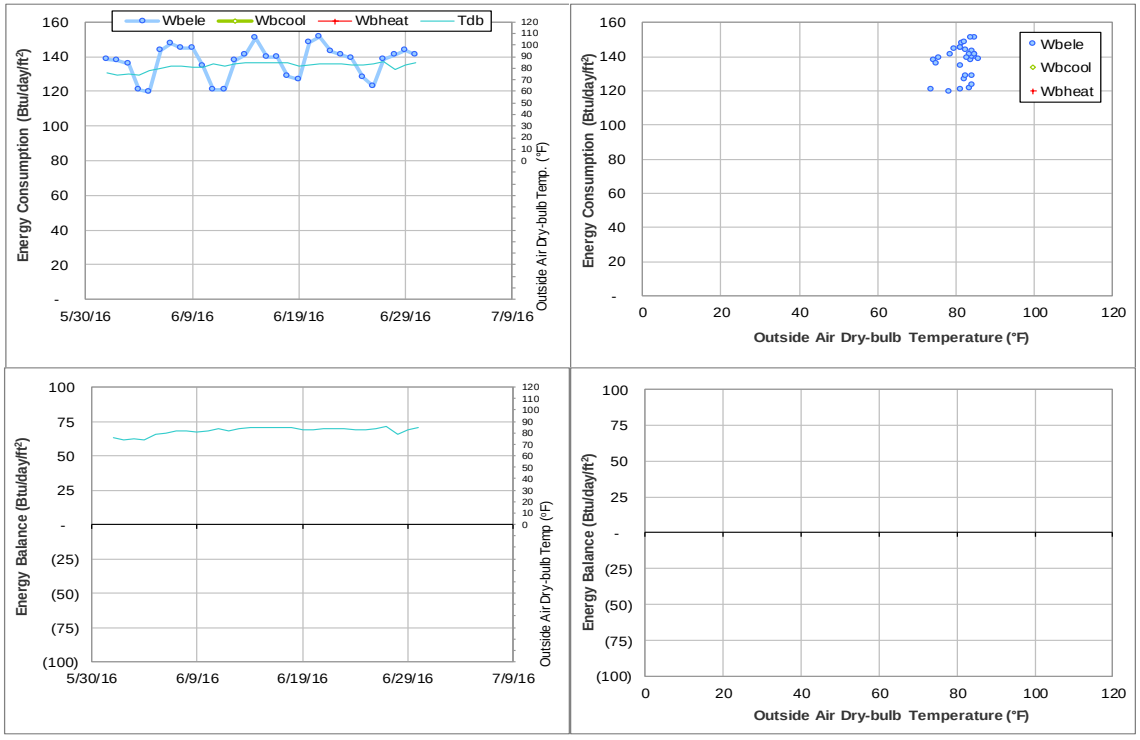


Figure IV-100 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during June 2016

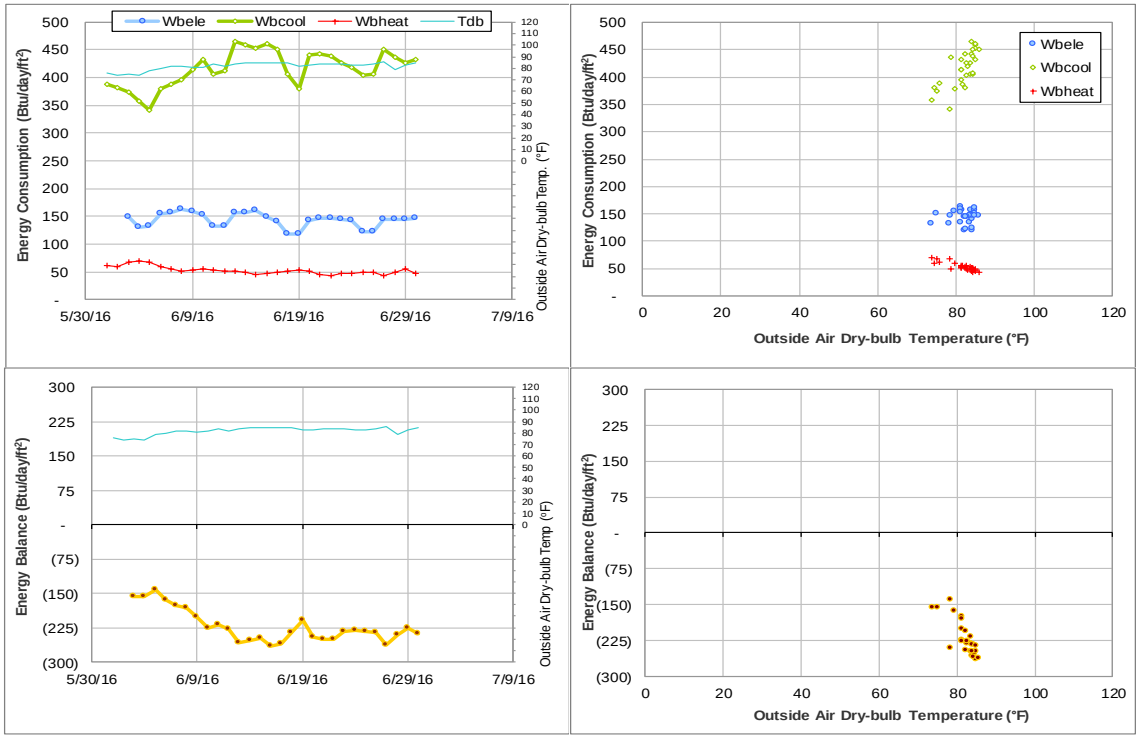


Figure IV-101 Veterinary Teaching Hospital and Med Adm TAMU BLDG # 508 and 1026 Energy Balance Plot during June 2016

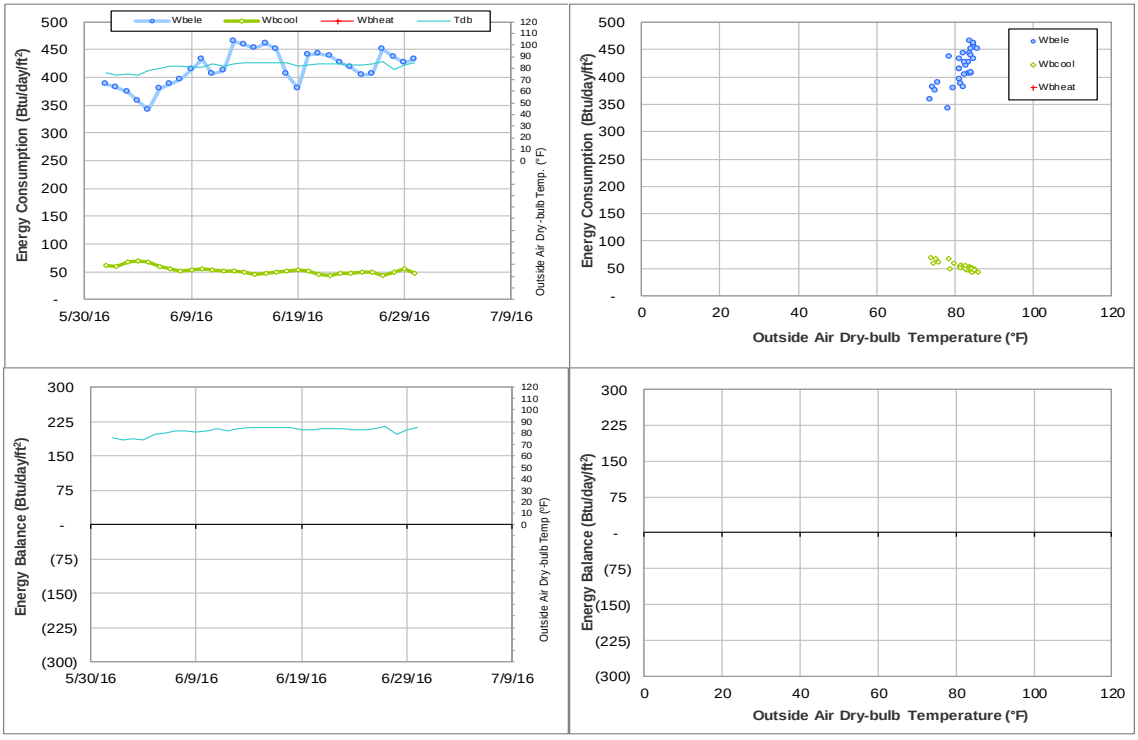


Figure IV-102 Veterinary Teaching Hospital TAMU BLDG # 508 Energy Balance Plot during June 2016

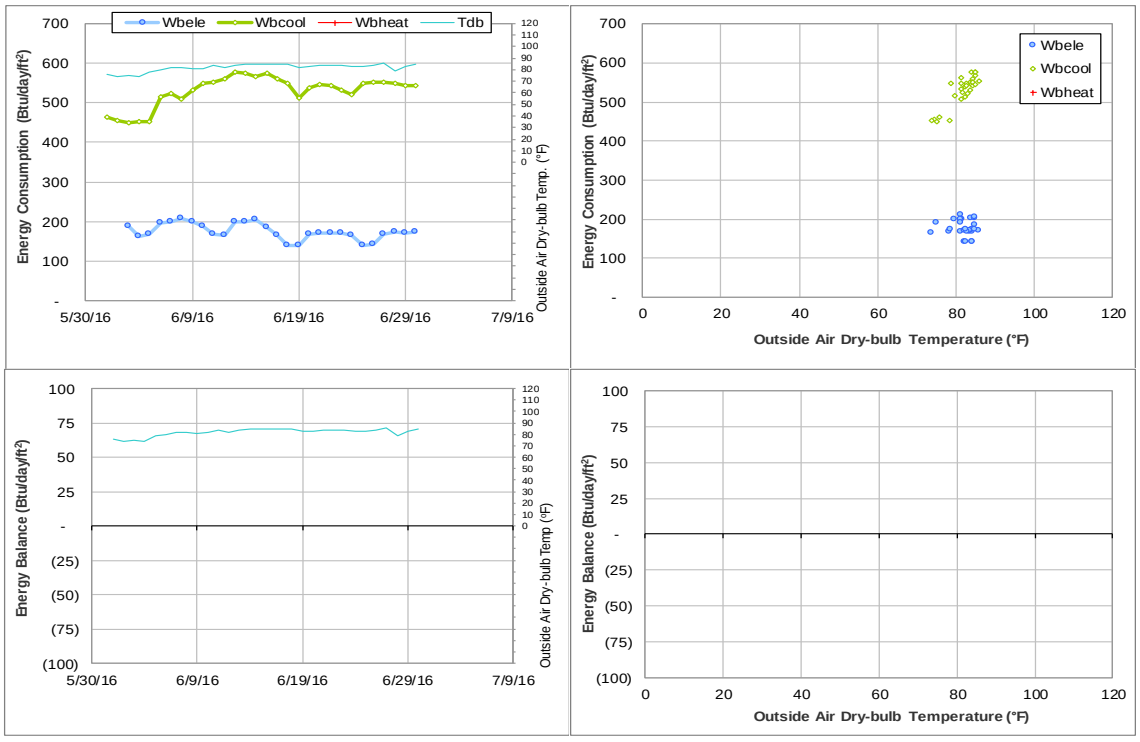


Figure IV-103 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during June 2016

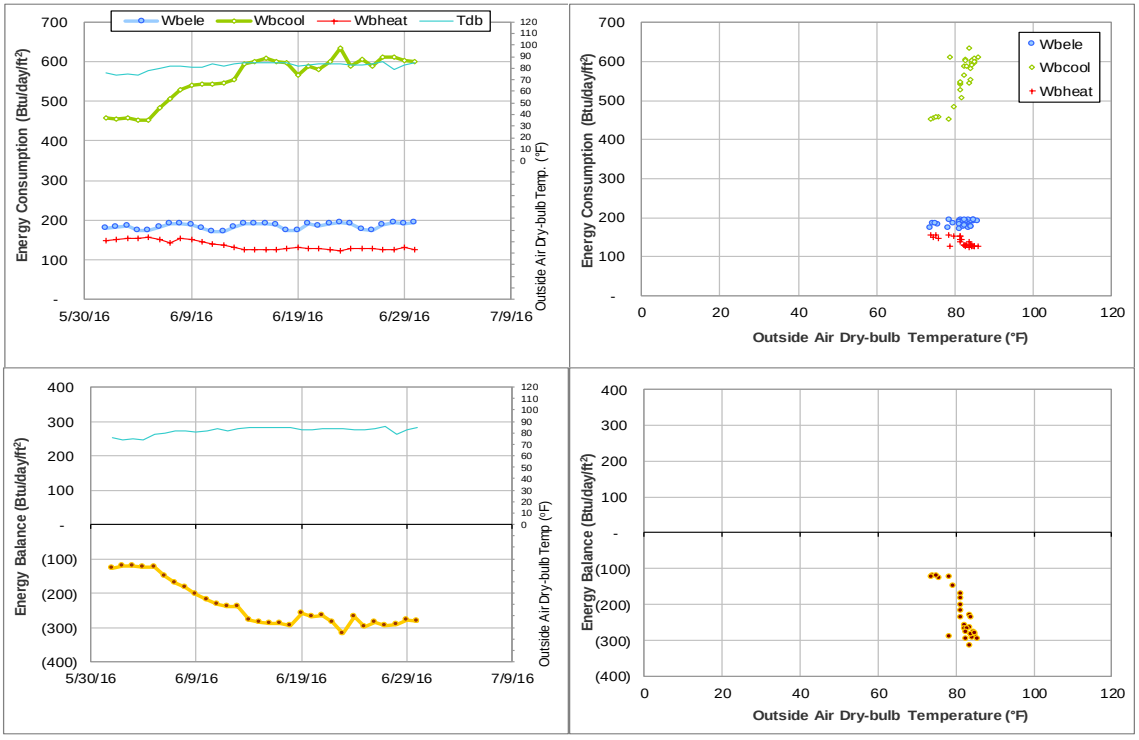


Figure IV-104 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during June 2016

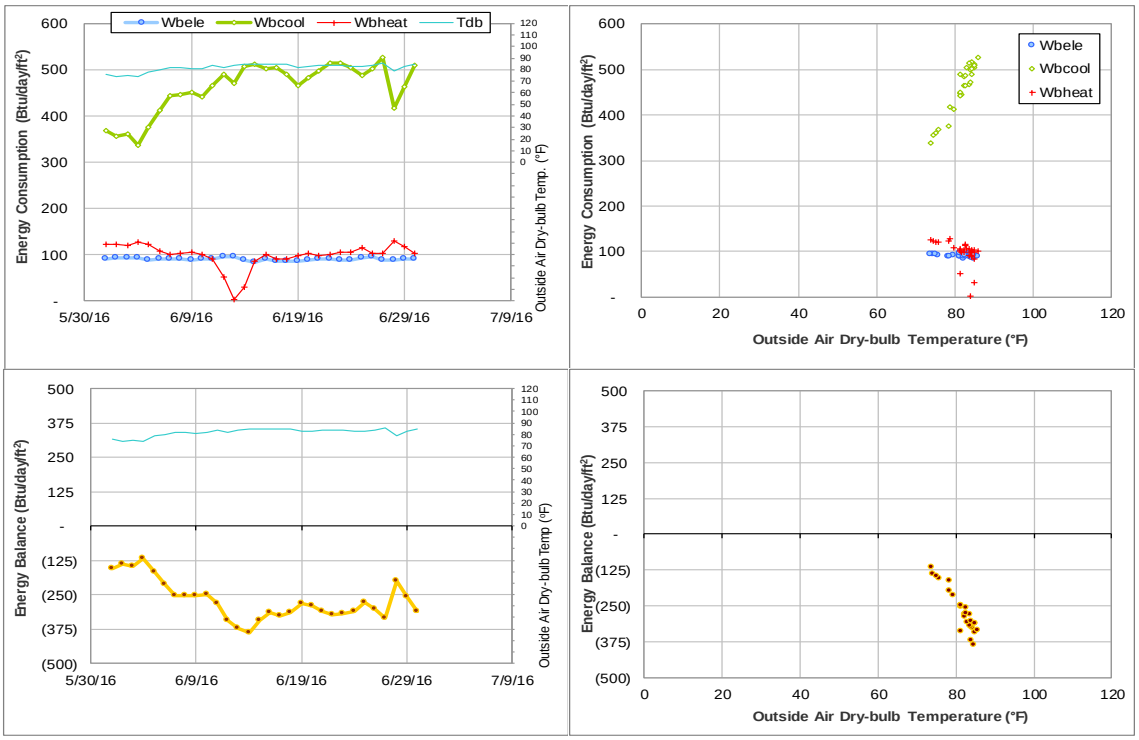


Figure IV-105 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during June 2016

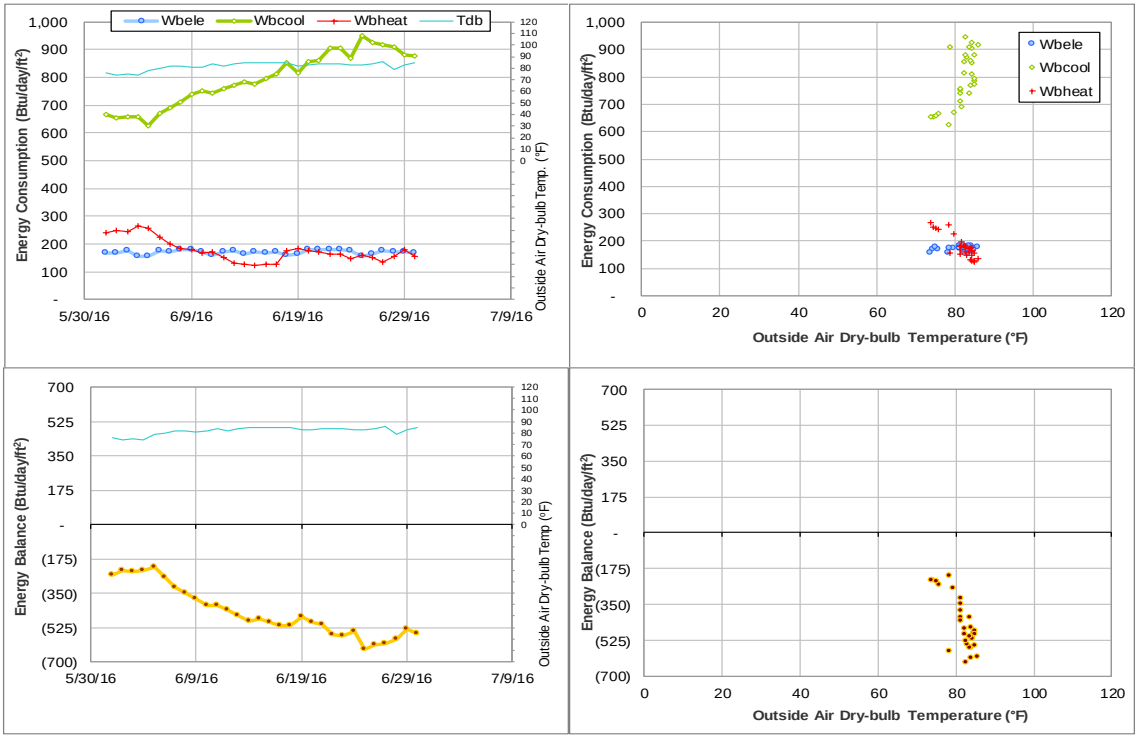


Figure IV-106 Doherty Building TAMU BLDG # 513 Energy Balance Plot during June 2016

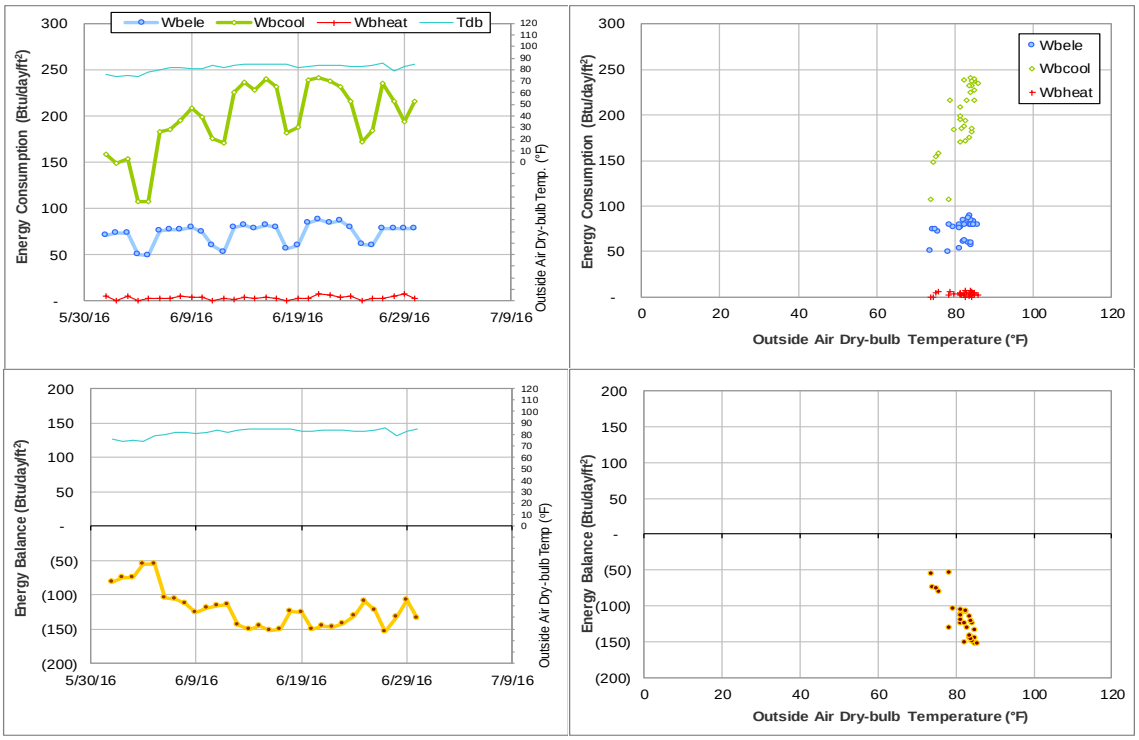


Figure IV-107 Munnerlyn Astronomy & Space Sciences Engineering TAMU BLDG # 514 Energy Balance Plot during June 2016

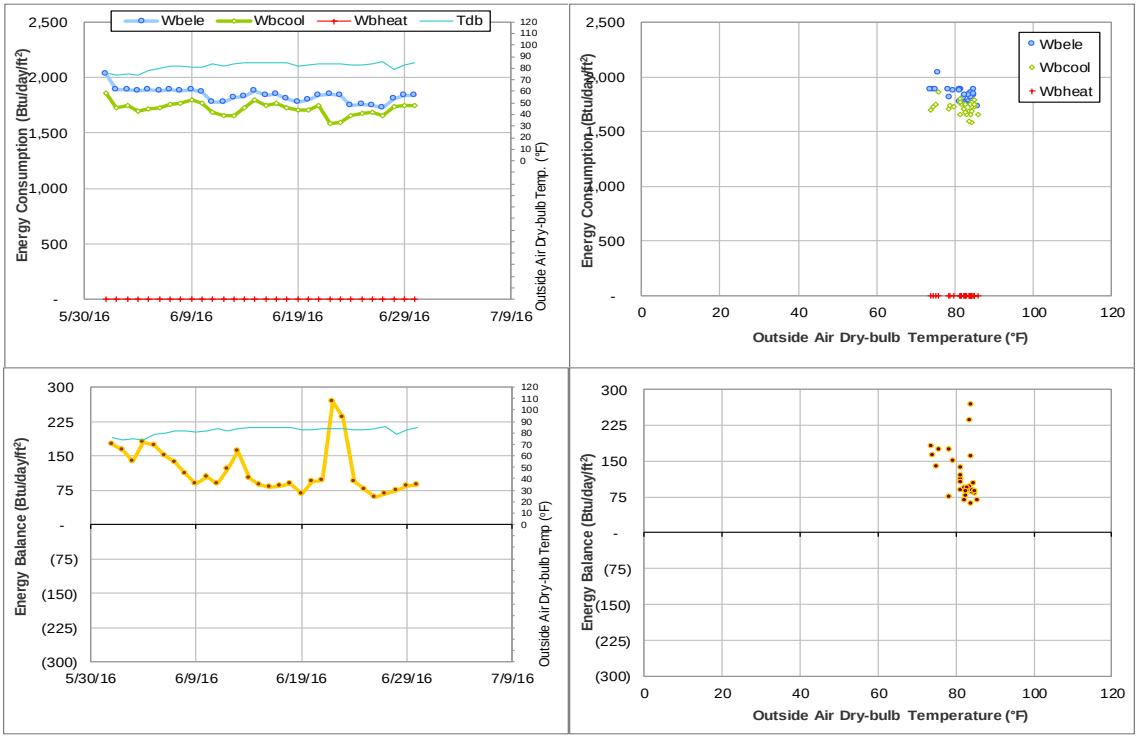


Figure IV-108 Computing Services Center TAMU BLDG # 516 Energy Balance Plot during June 2016

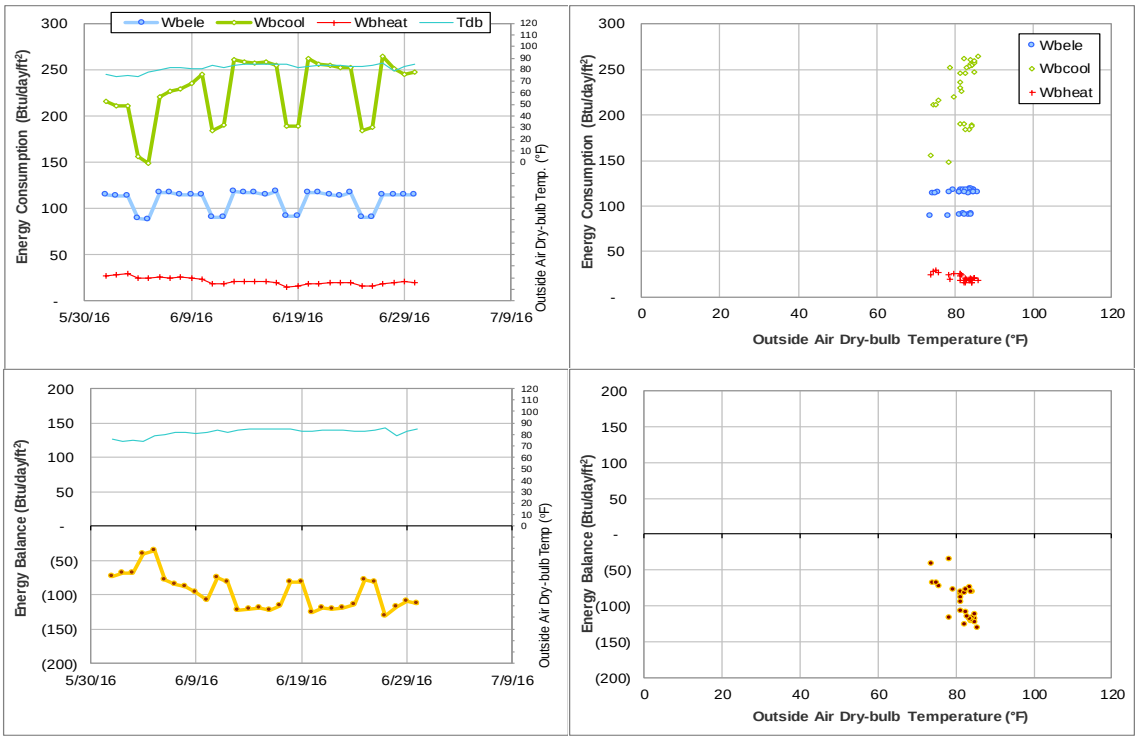


Figure IV-109 Beutel Health Center TAMU BLDG # 520 Energy Balance Plot during June 2016

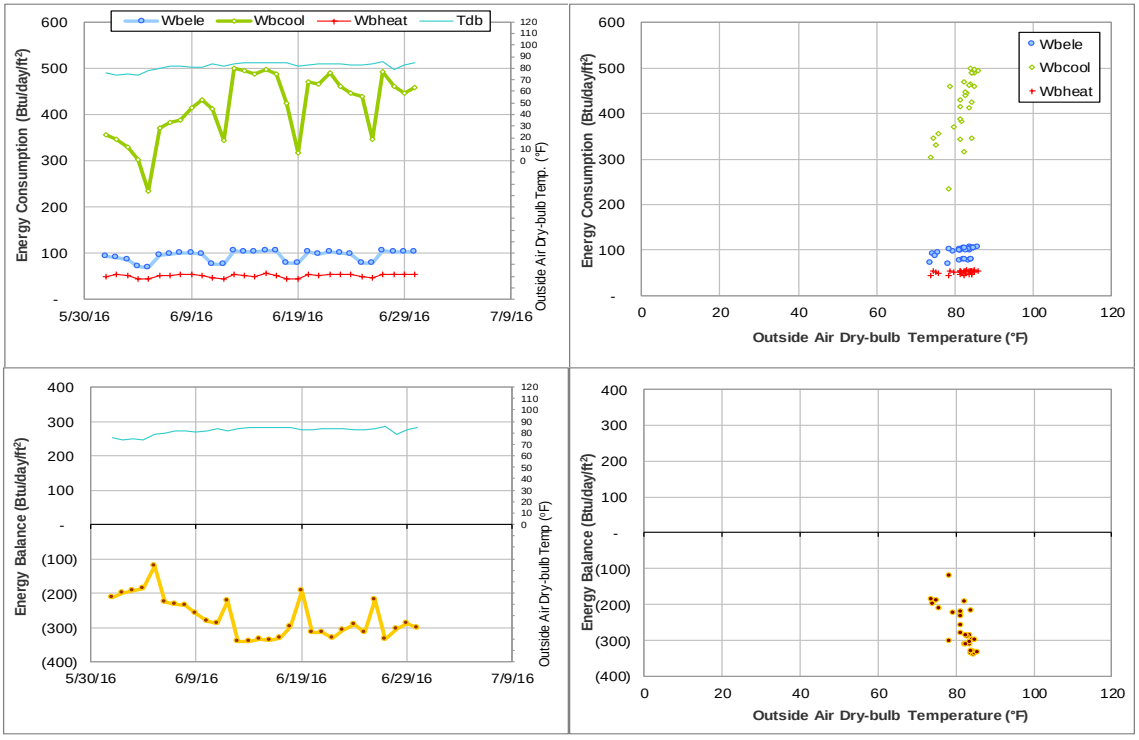


Figure IV-110 Heldenfels Hall TAMU BLDG # 521 Energy Balance Plot during June 2016

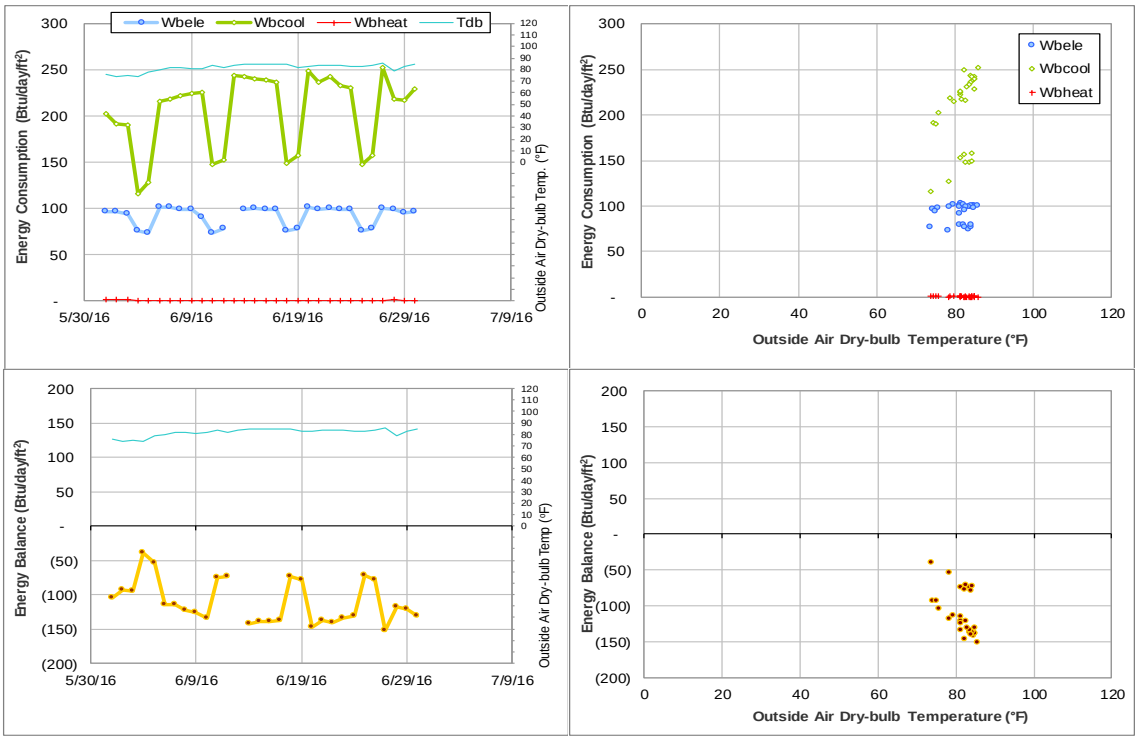


Figure IV-111 Blocker building TAMU BLDG # 524 Energy Balance Plot during June 2016

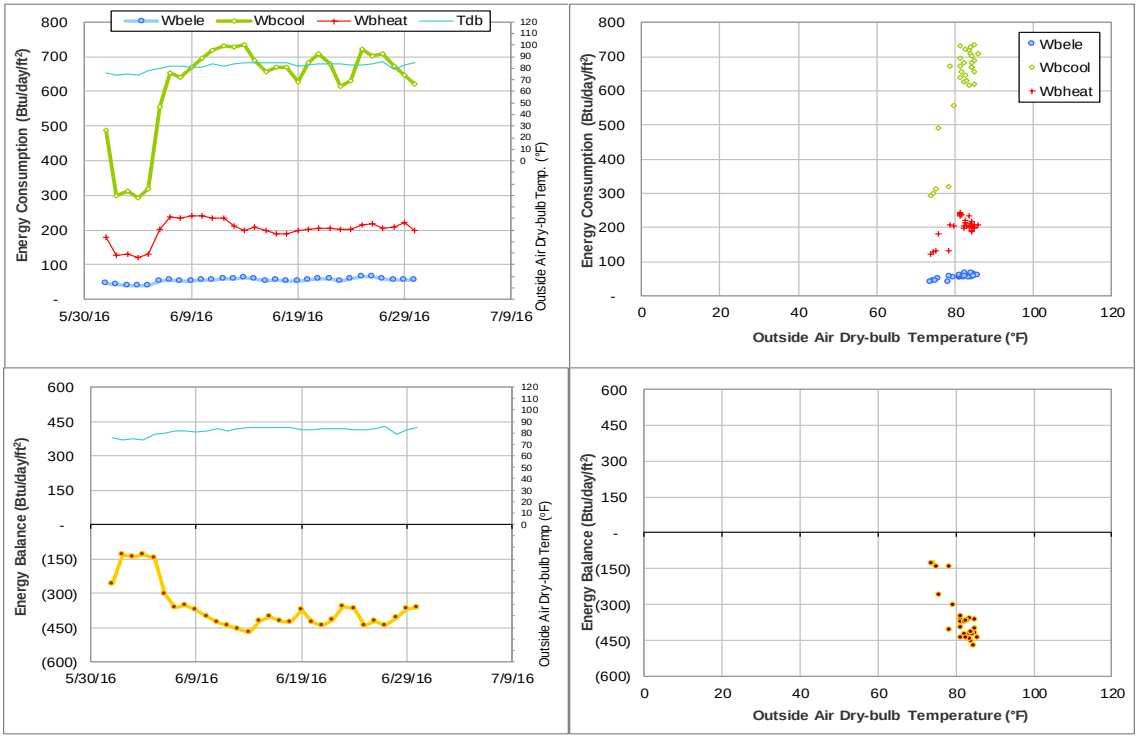


Figure IV-112 Clements Residence Hall TAMU BLDG # 548 Energy Balance Plot during June 2016

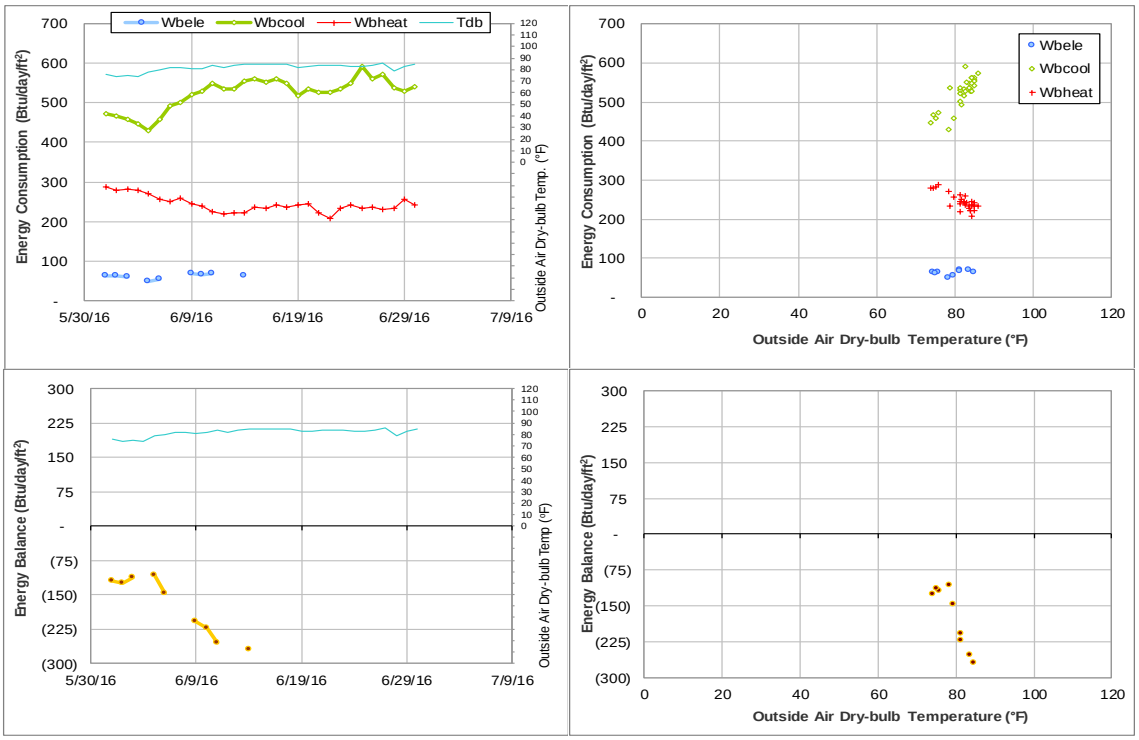


Figure IV-113 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during June 2016

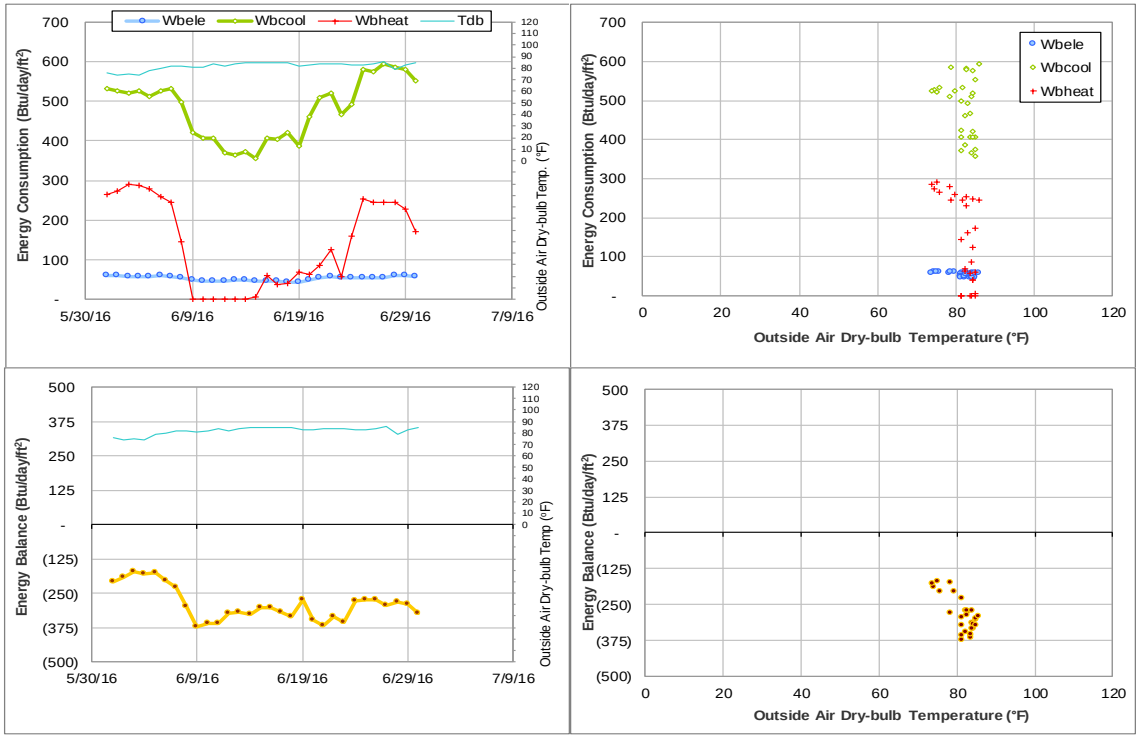


Figure IV-114 McFadden Residence Hall TAMU BLDG # 550 Energy Balance Plot during June 2016

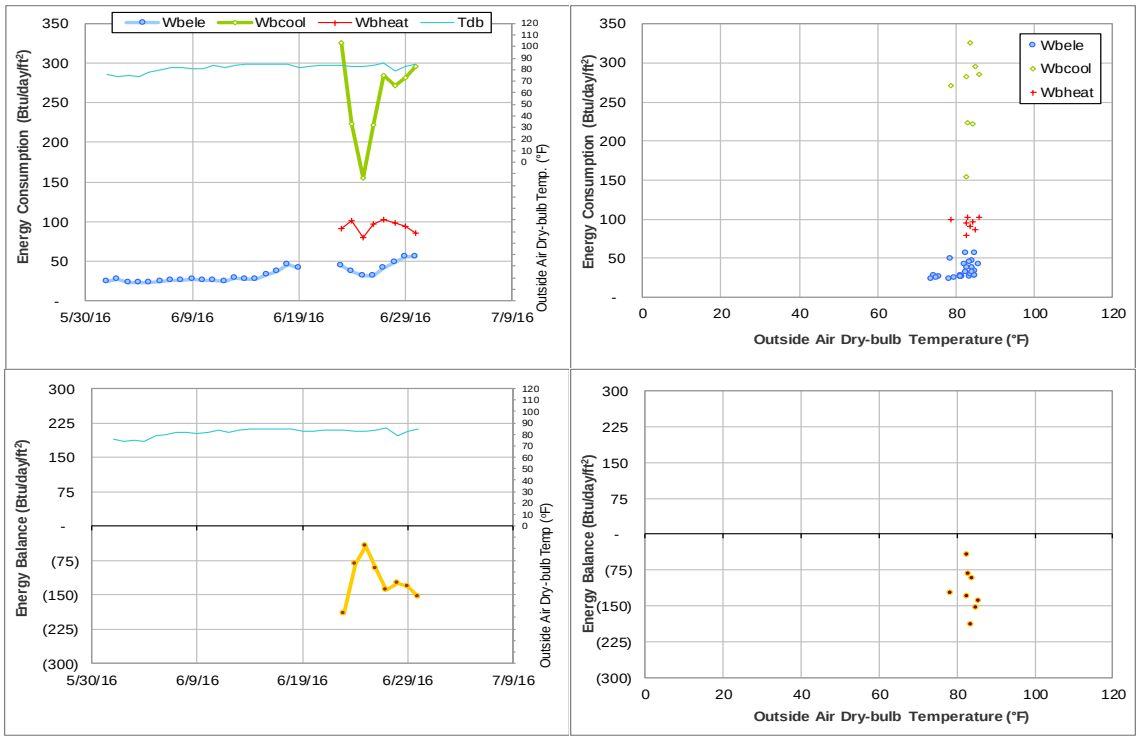


Figure IV-115 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during June 2016

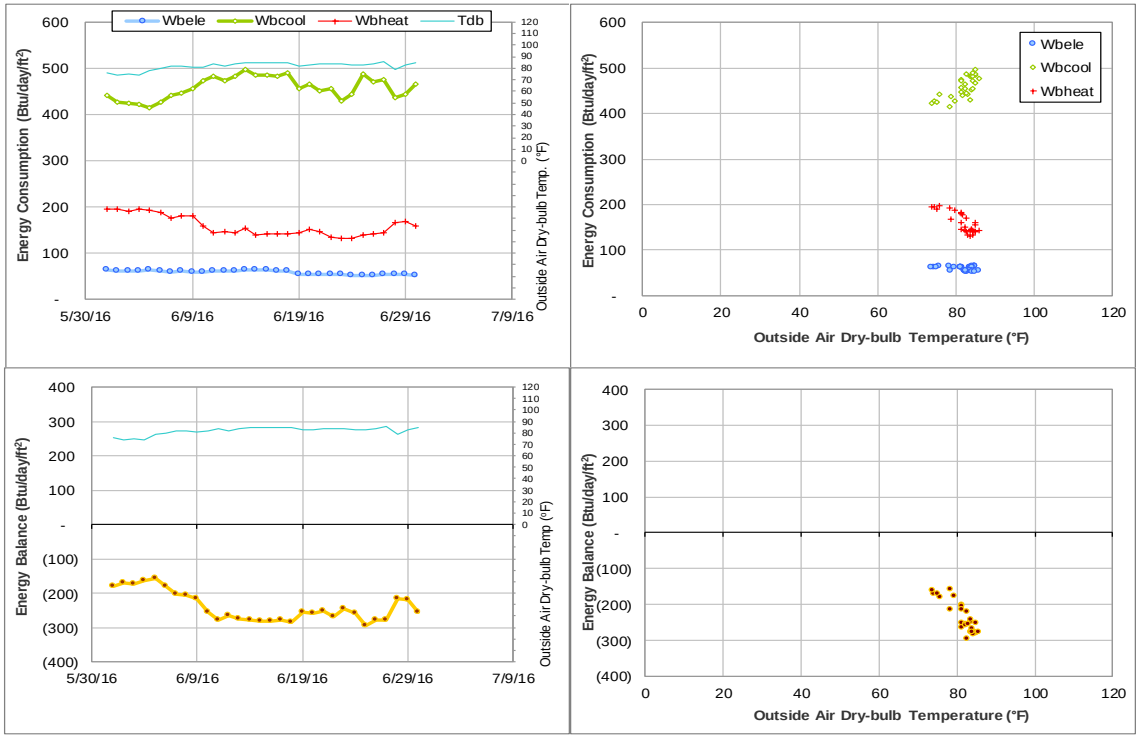


Figure IV-116 Hobby Residence Hall TAMU BLDG # 653 Energy Balance Plot during June 2016

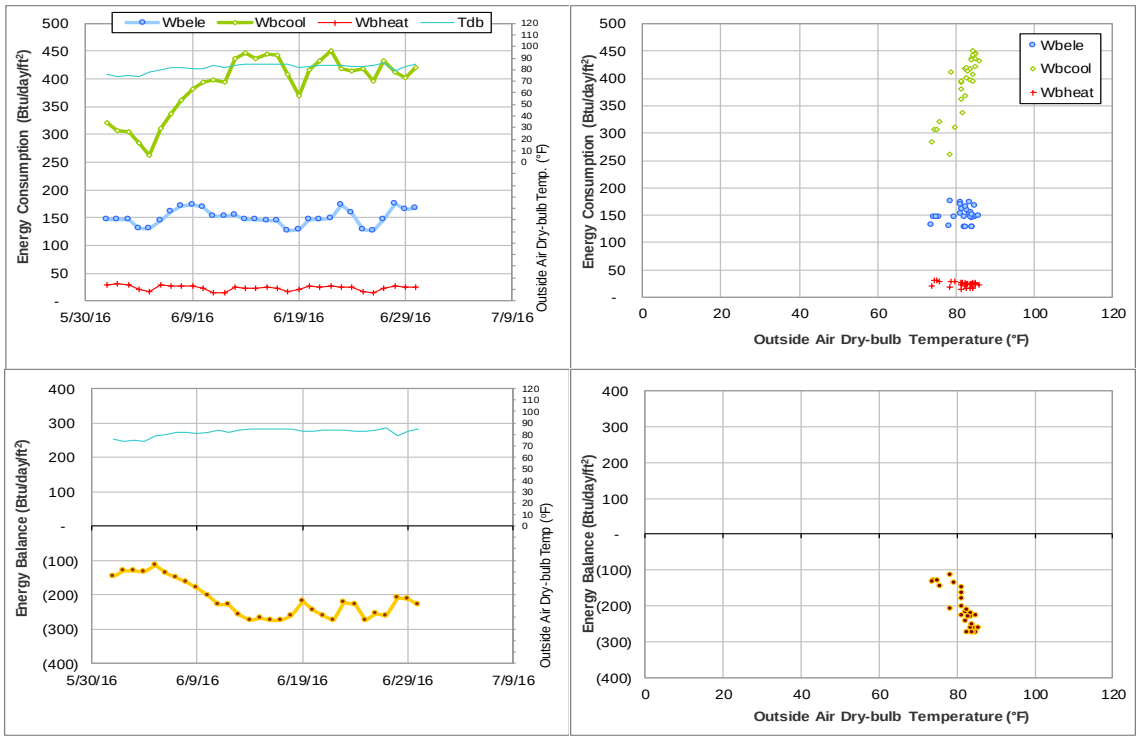


Figure IV-117 Wisenbaker Engineering Research Center TAMU BLDG # 682 Energy Balance Plot during June 2016

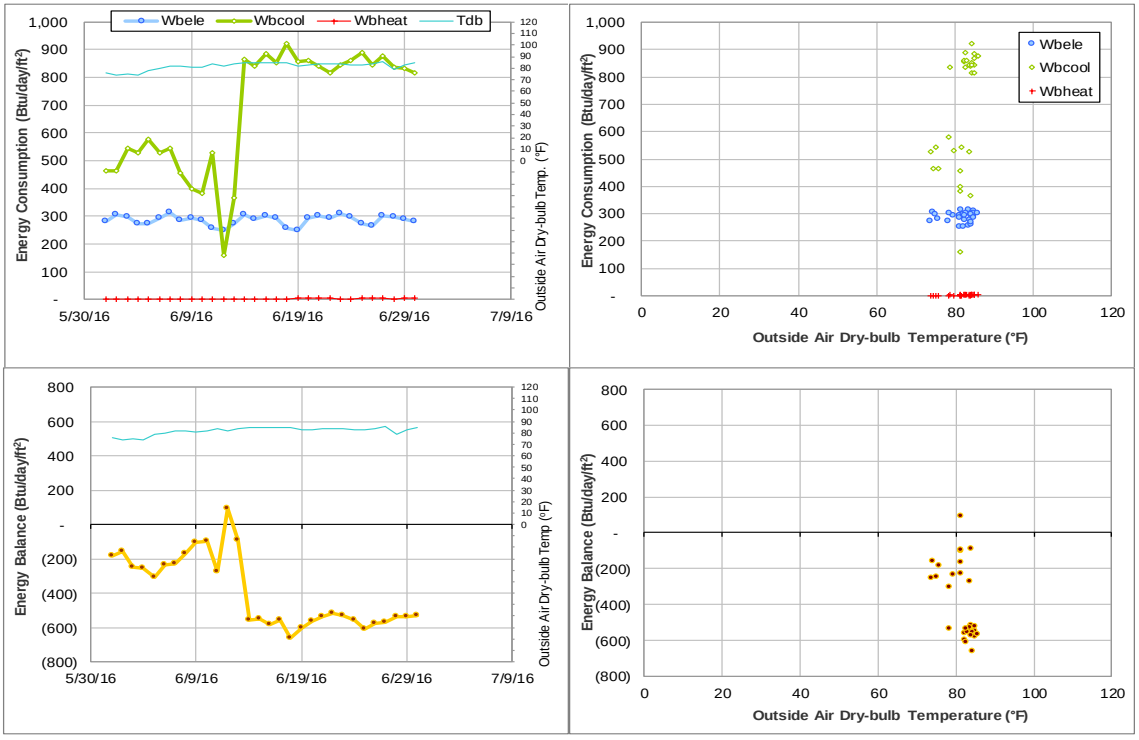


Figure IV-118 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during June 2016

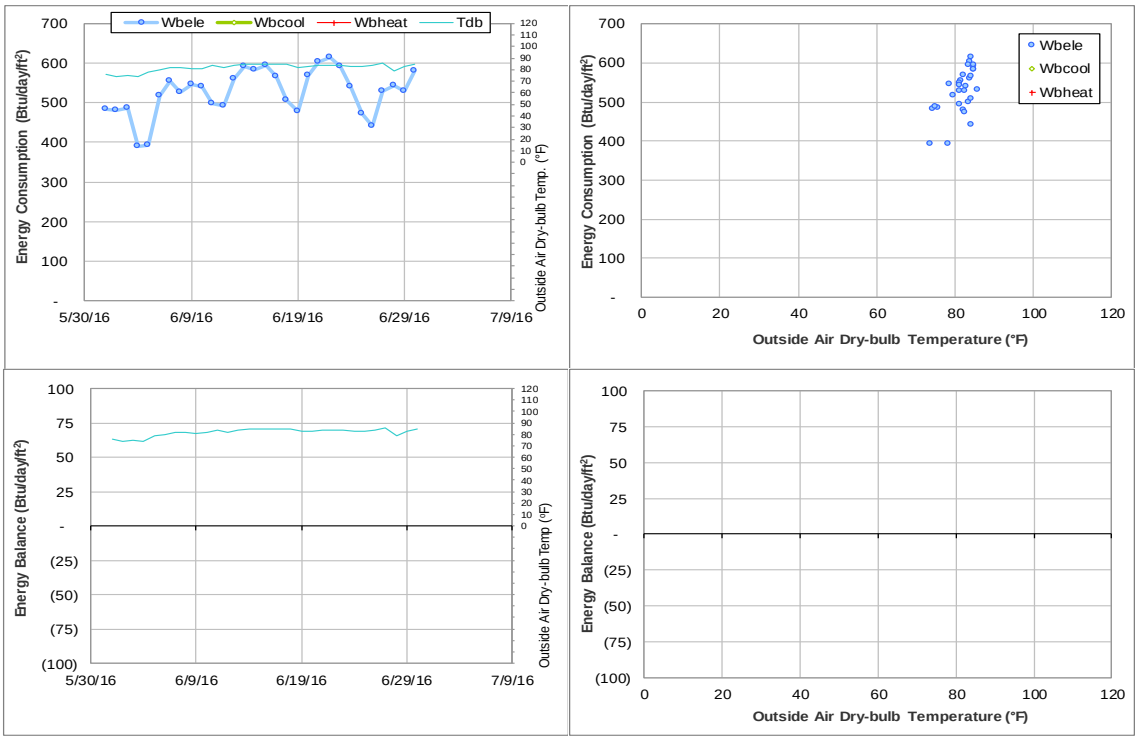


Figure IV-119 Soil Testing Labs TAMU BLDG # 806 Energy Balance Plot during June 2016

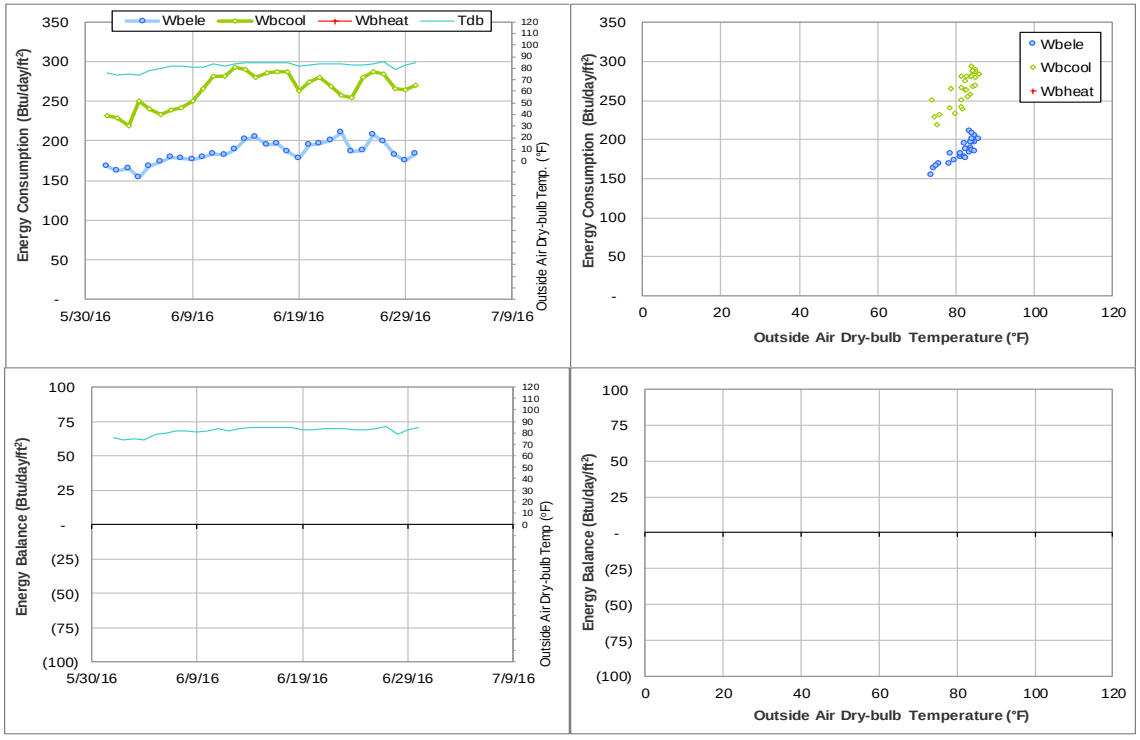


Figure IV-120 Entomology Research Lab TAMU BLDG # 815 Energy Balance Plot during June 2016

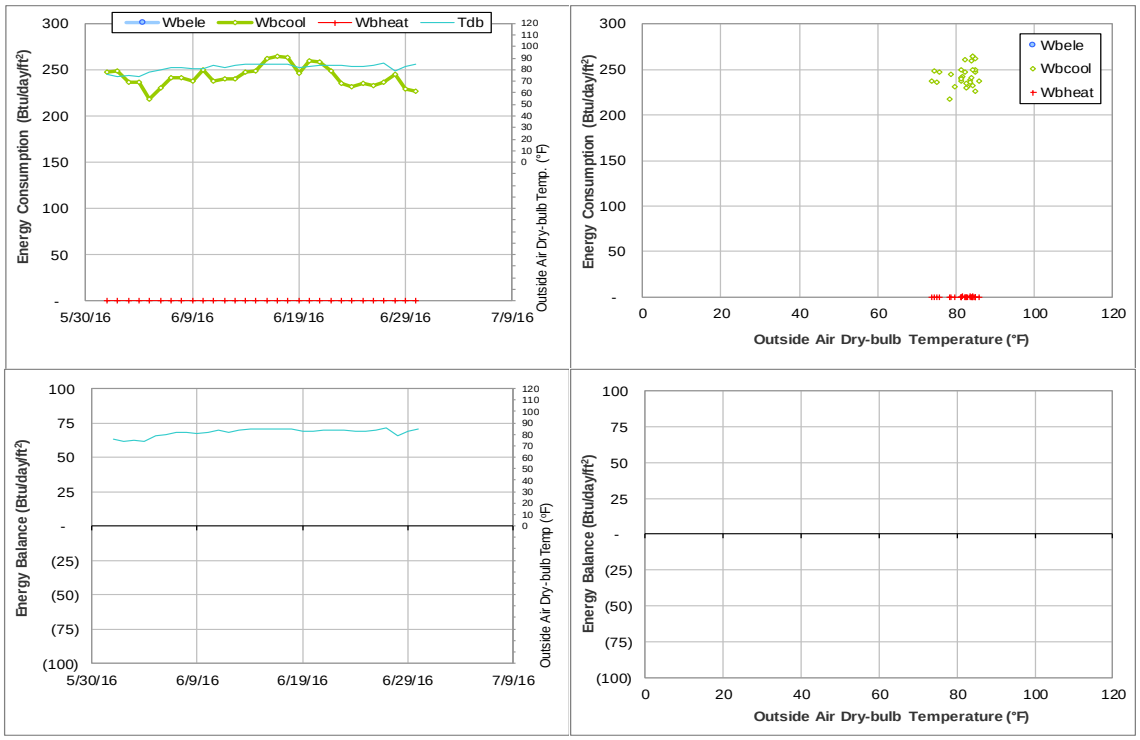


Figure IV-121 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during June 2016

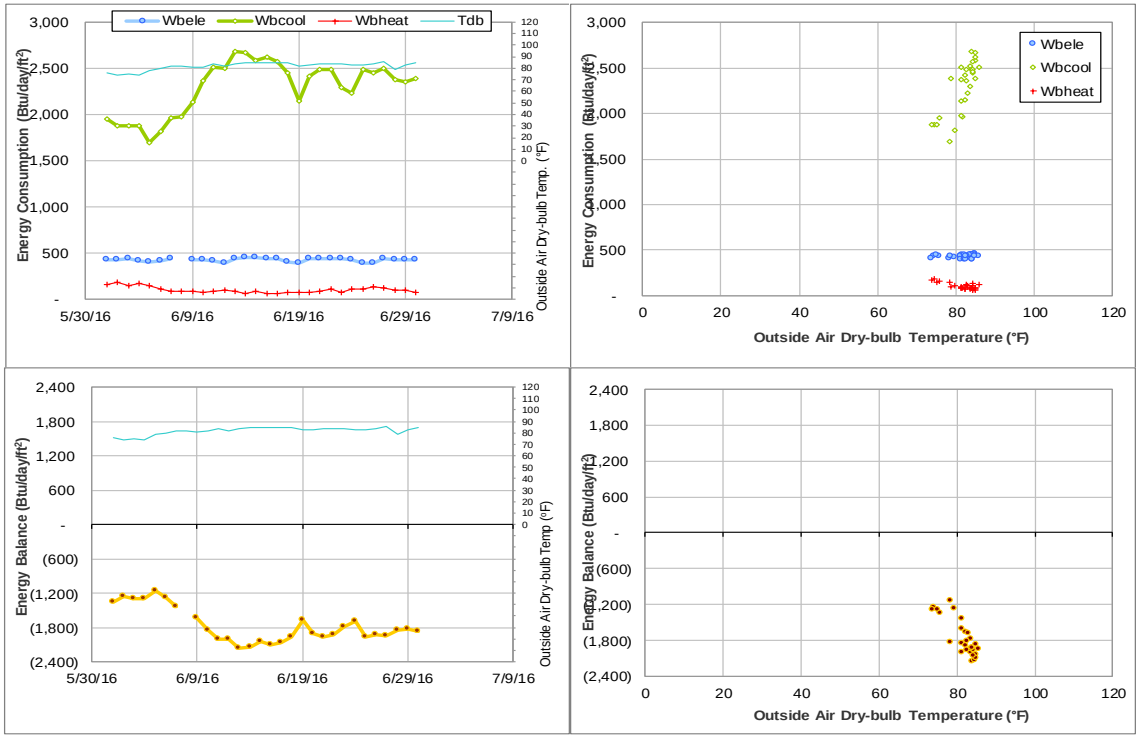


Figure IV-122 Laboratory Animal Care Building TAMU BLDG # 972 Energy Balance Plot during June 2016

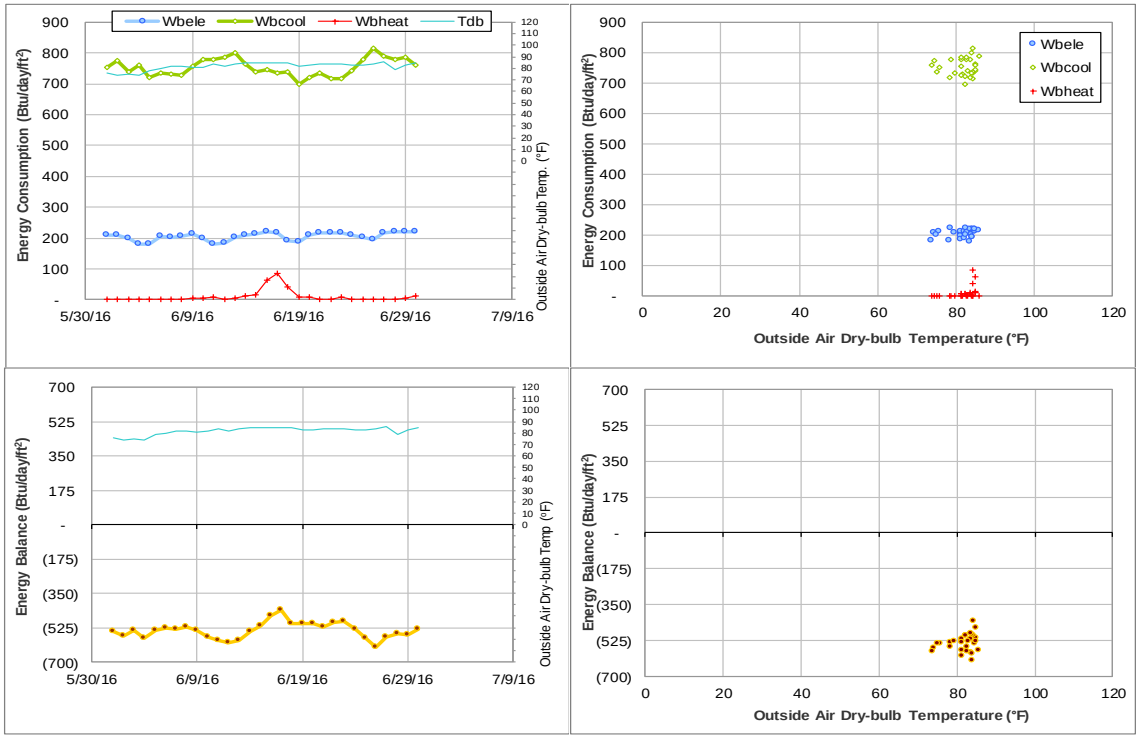


Figure IV-123 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during June 2016

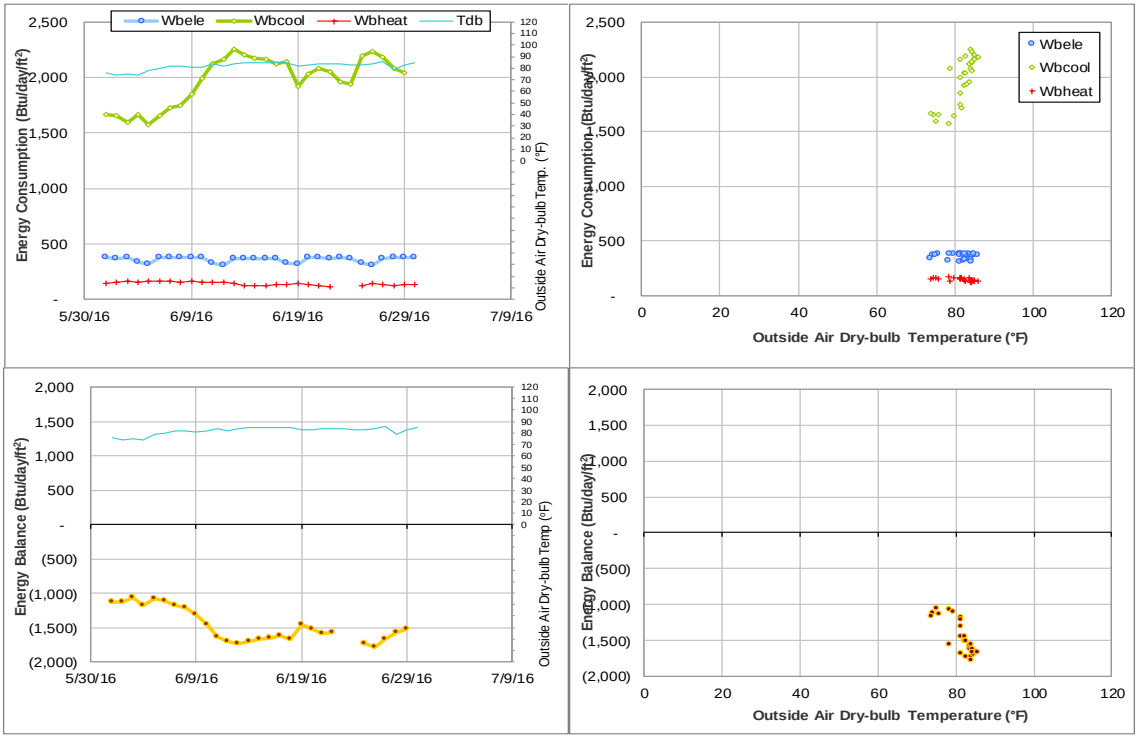


Figure IV-124 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during June 2016

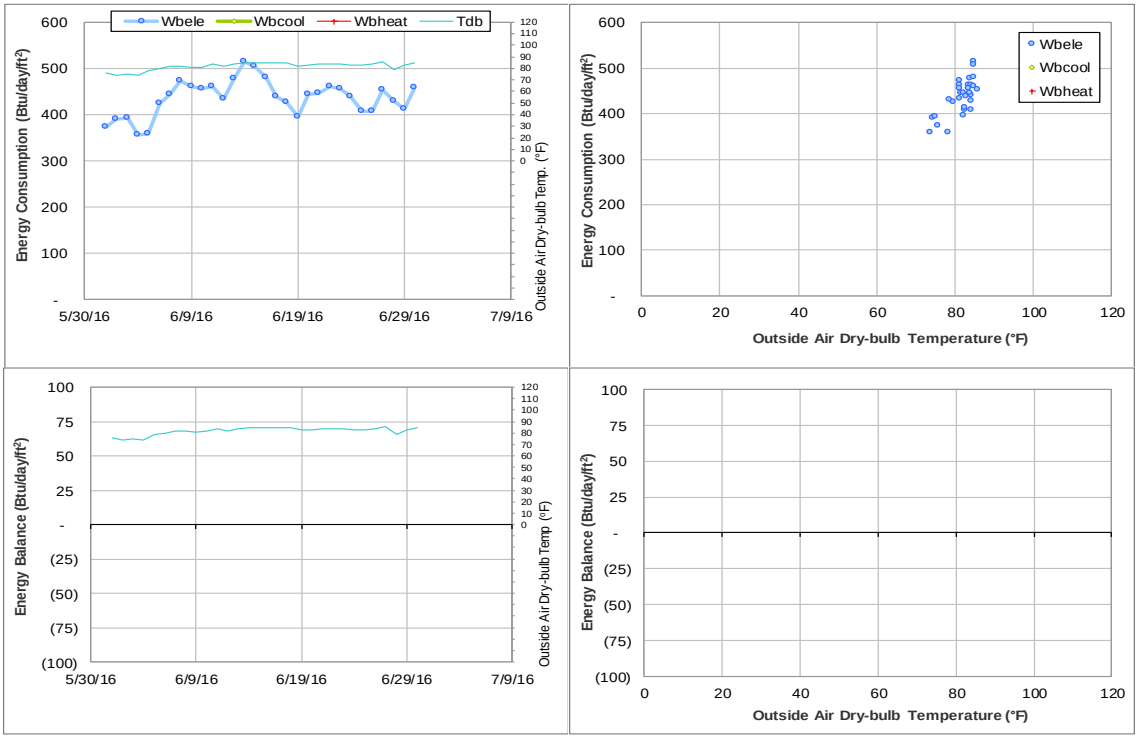


Figure IV-125 Forest Science Laboratory Building TAMU BLDG # 1042 Energy Balance Plot during June 2016

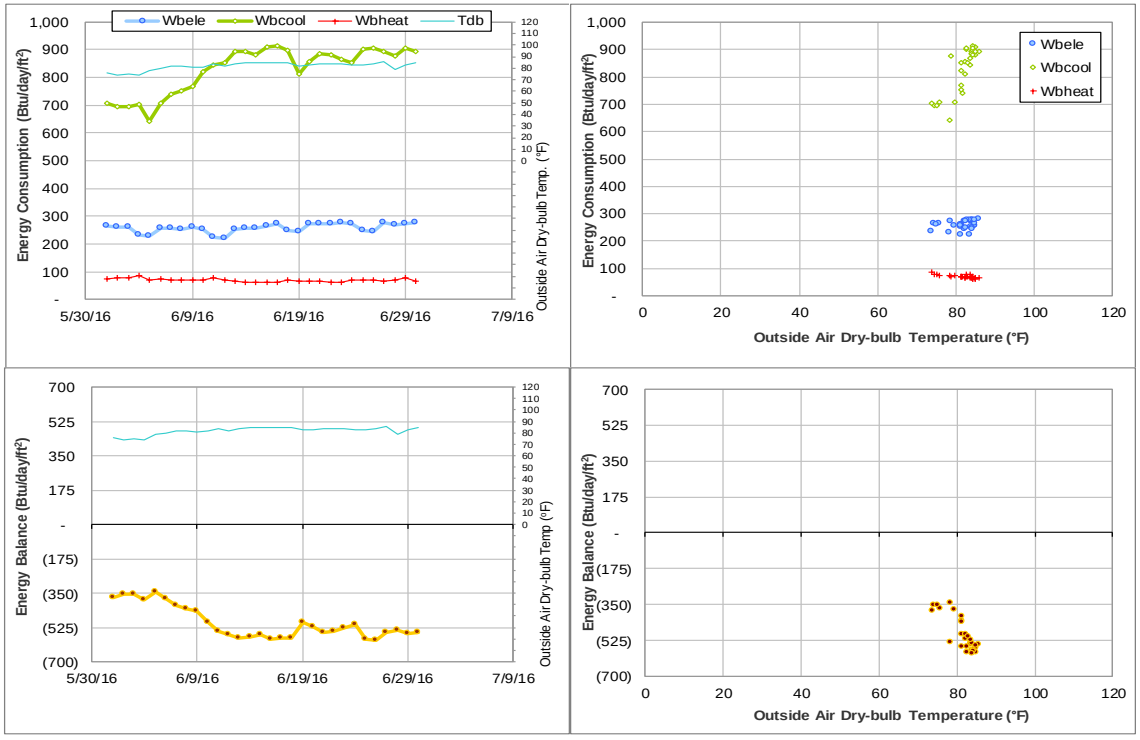


Figure IV-126 Veterinary Small Animal Hospital TAMU BLDG # 1085 Energy Balance Plot during June 2016

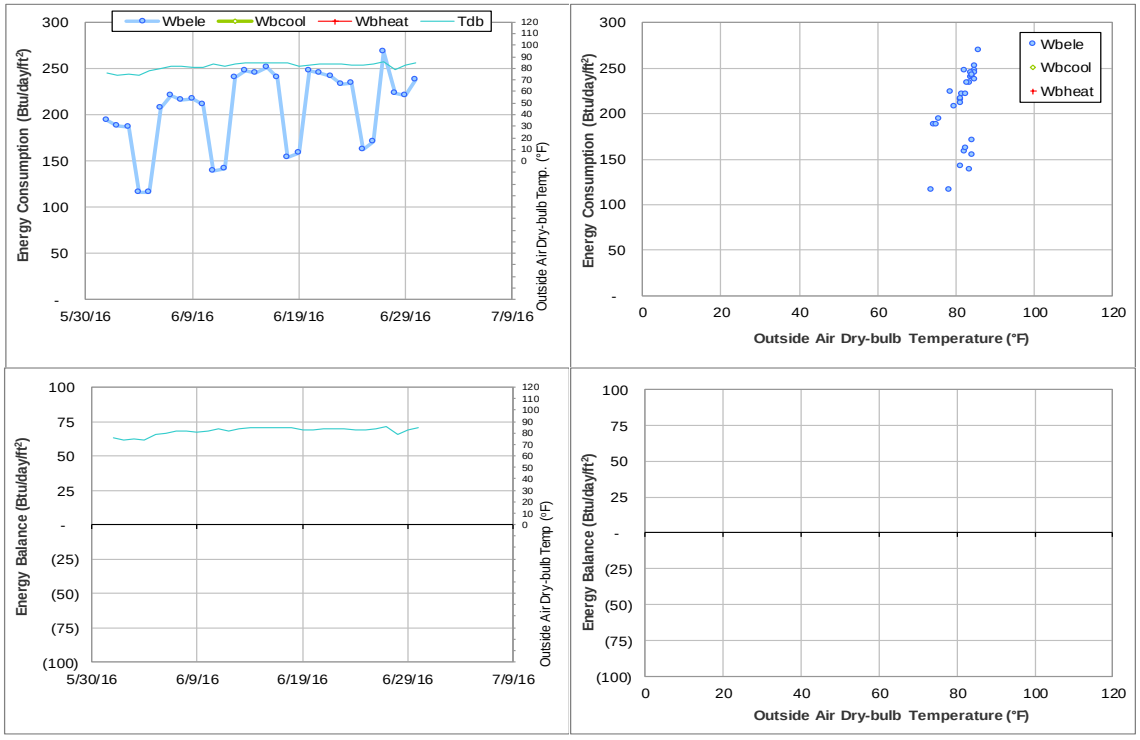


Figure IV-127 Utilities Energy Office Annex TAMU BLDG # 1089 Energy Balance Plot during June 2016

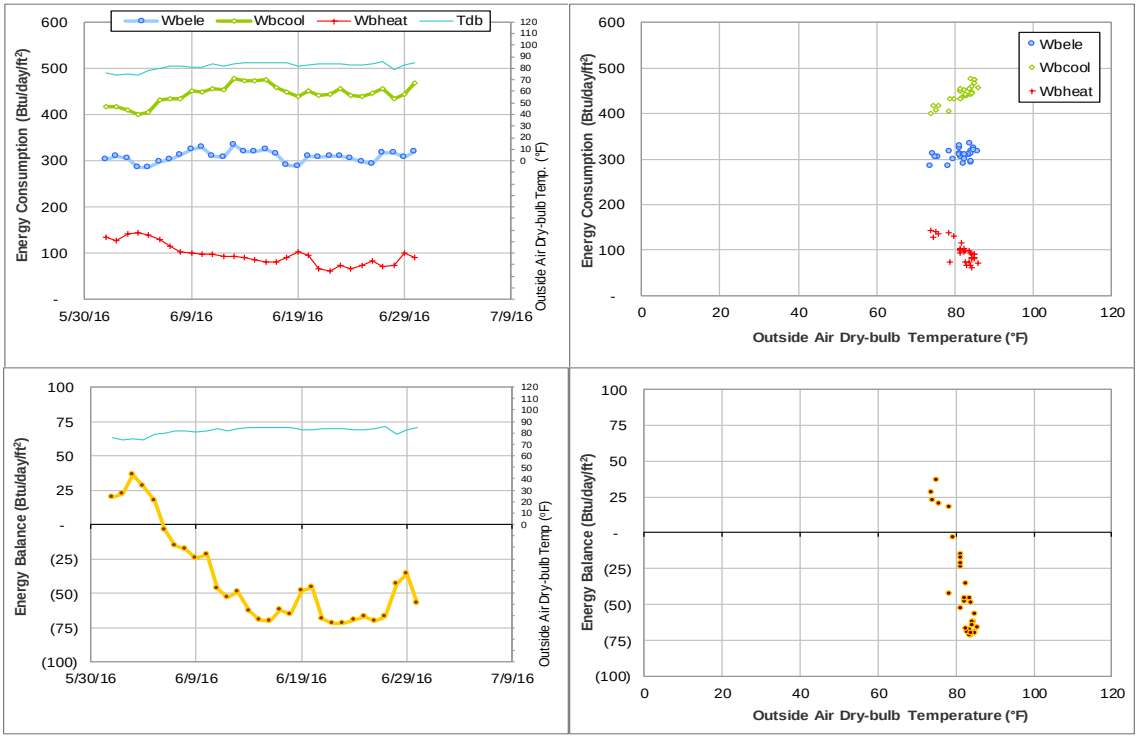


Figure IV-128 Biological Control Facility TAMU BLDG # 1146 Energy Balance Plot during June 2016

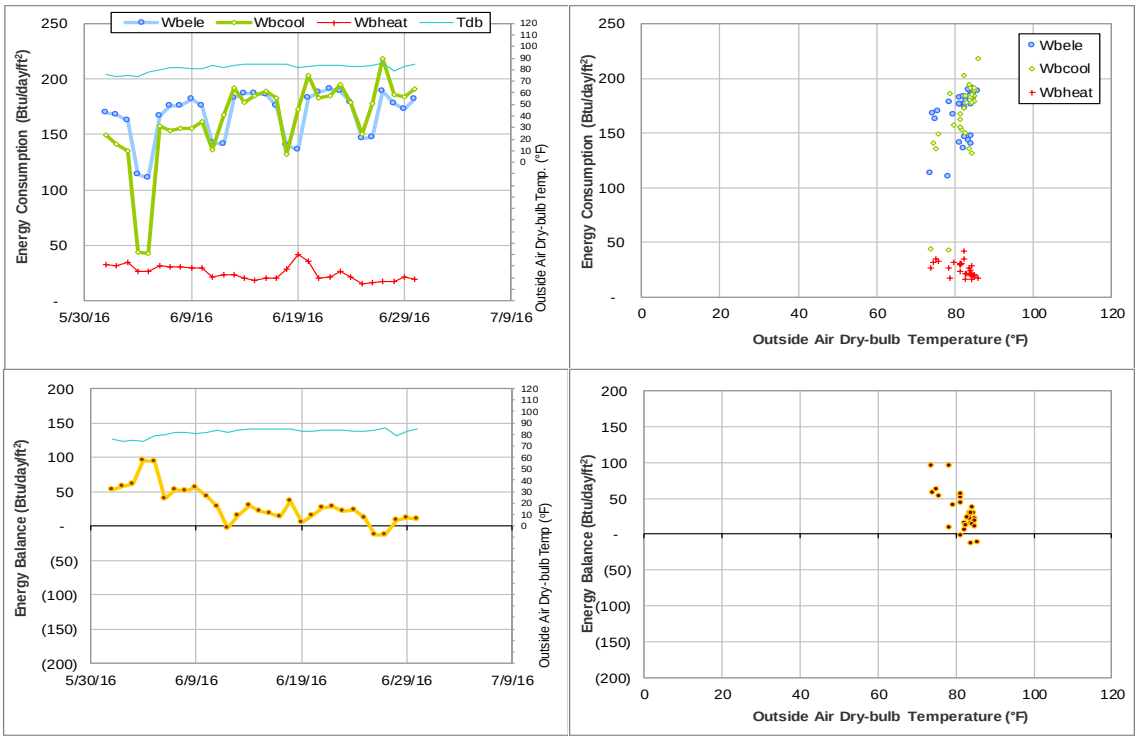


Figure IV-129 Physical Plant Administration & Shops TAMU BLDG # 1156 Energy Balance Plot during June 2016

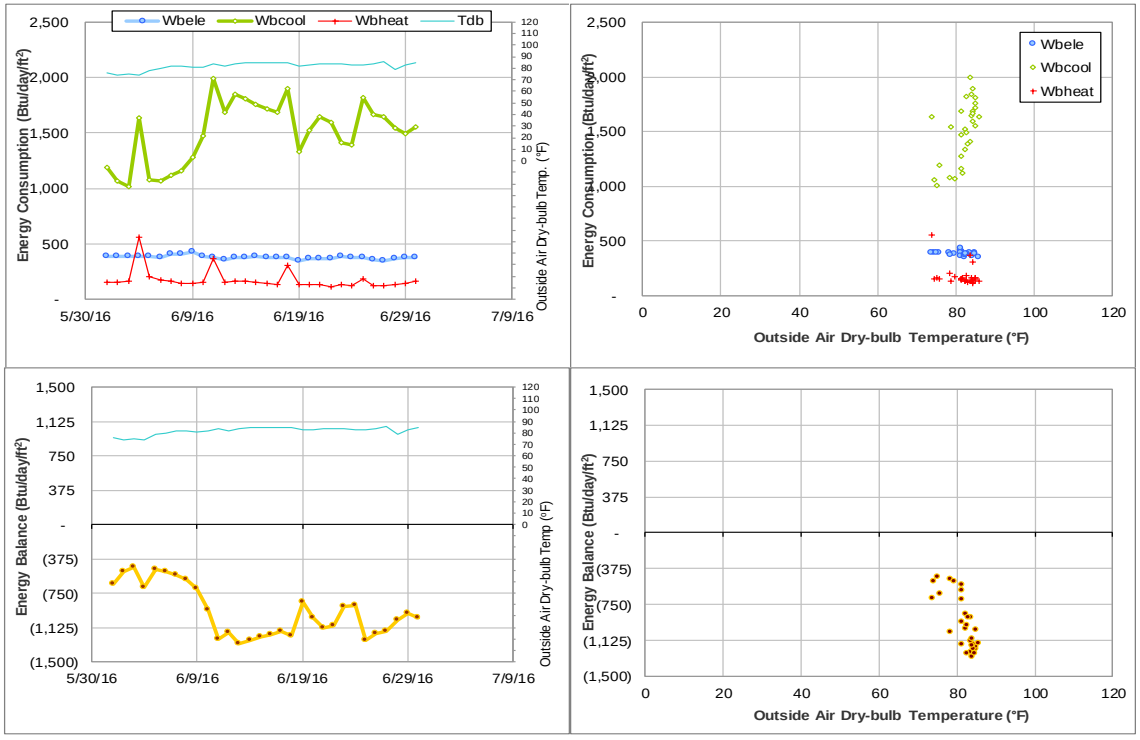


Figure IV-130 Veterinary Anatomic Pathology TAMU BLDG # 1184 Energy Balance Plot during June 2016

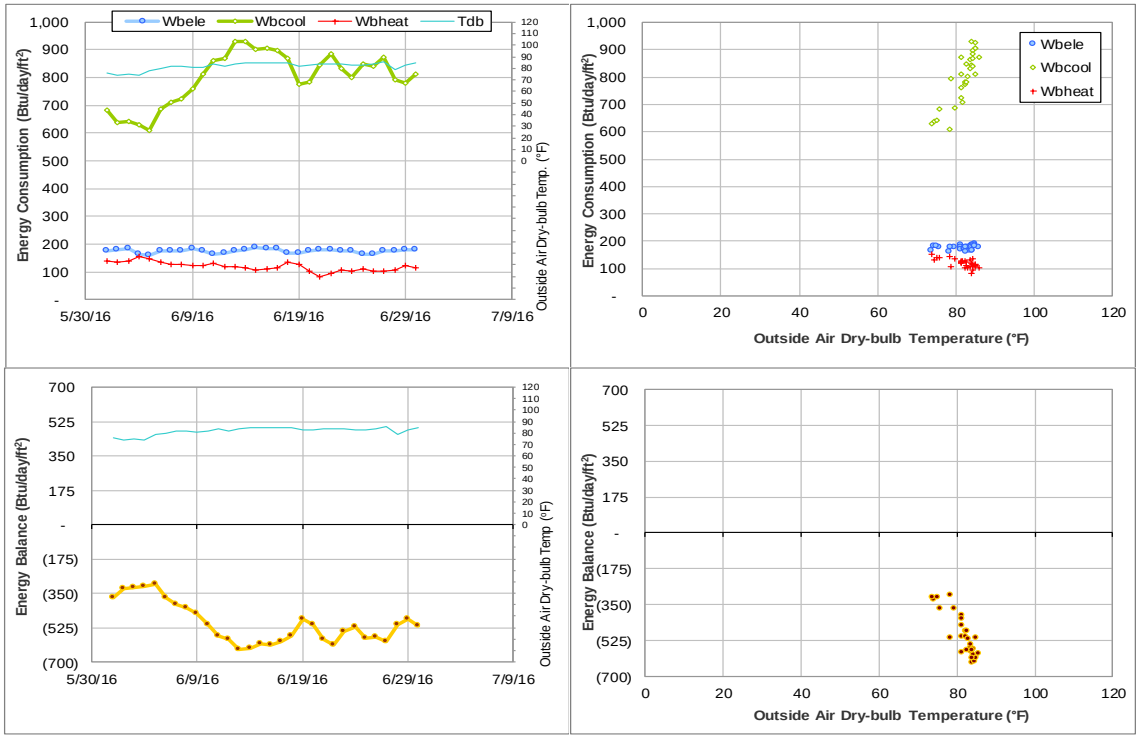


Figure IV-131 Veterinary Large Animal Hospital TAMU BLDG # 1194 Energy Balance Plot during June 2016

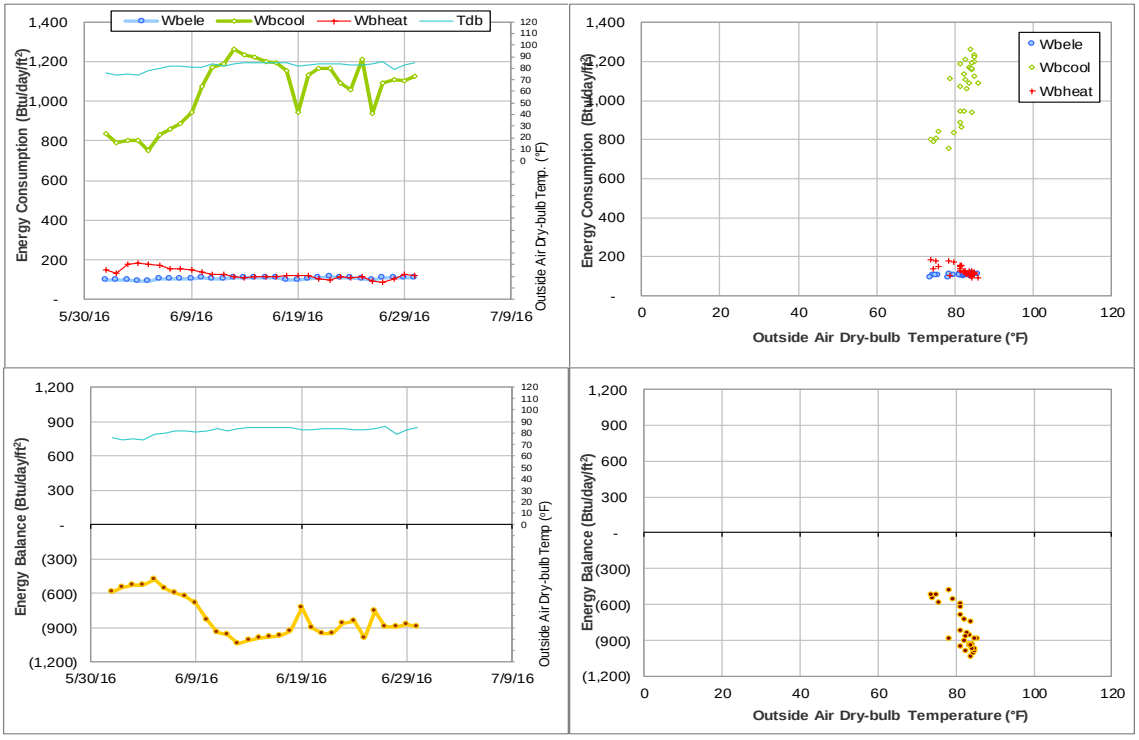


Figure IV-132 Veterinary Research Building TAMU BLDG # 1197 Energy Balance Plot during June 2016

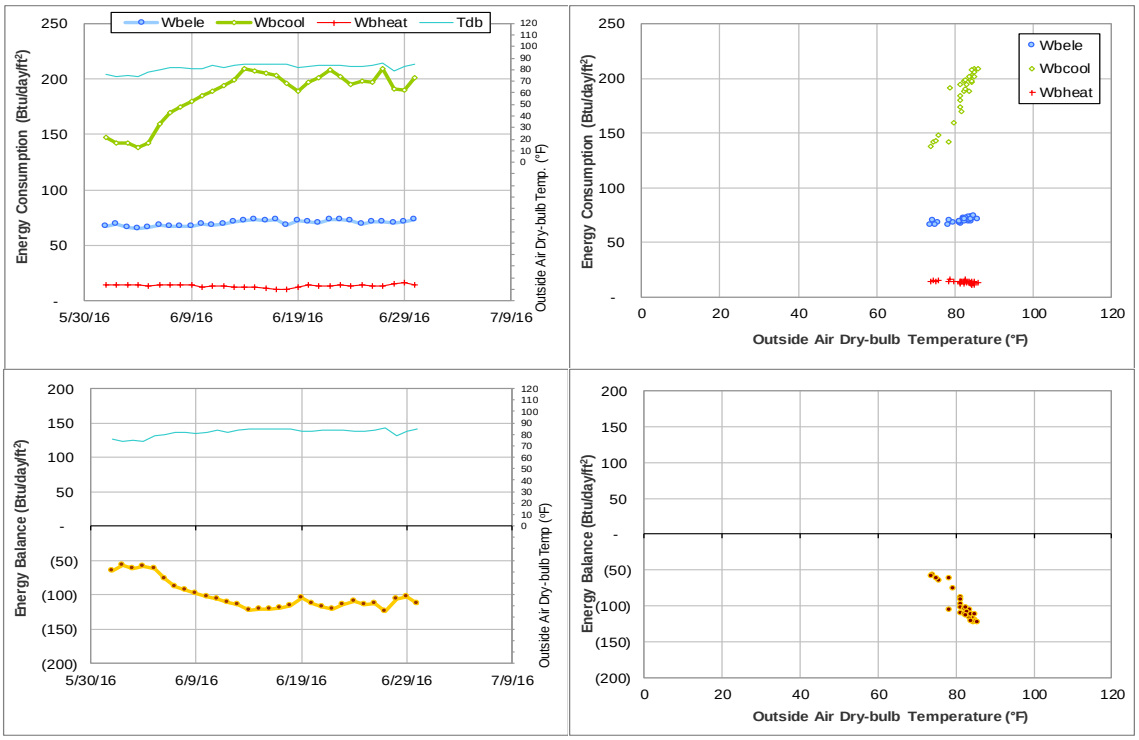


Figure IV-133 Hullabaloo Residence Hall TAMU BLDG # 1416 Energy Balance Plot during June 2016

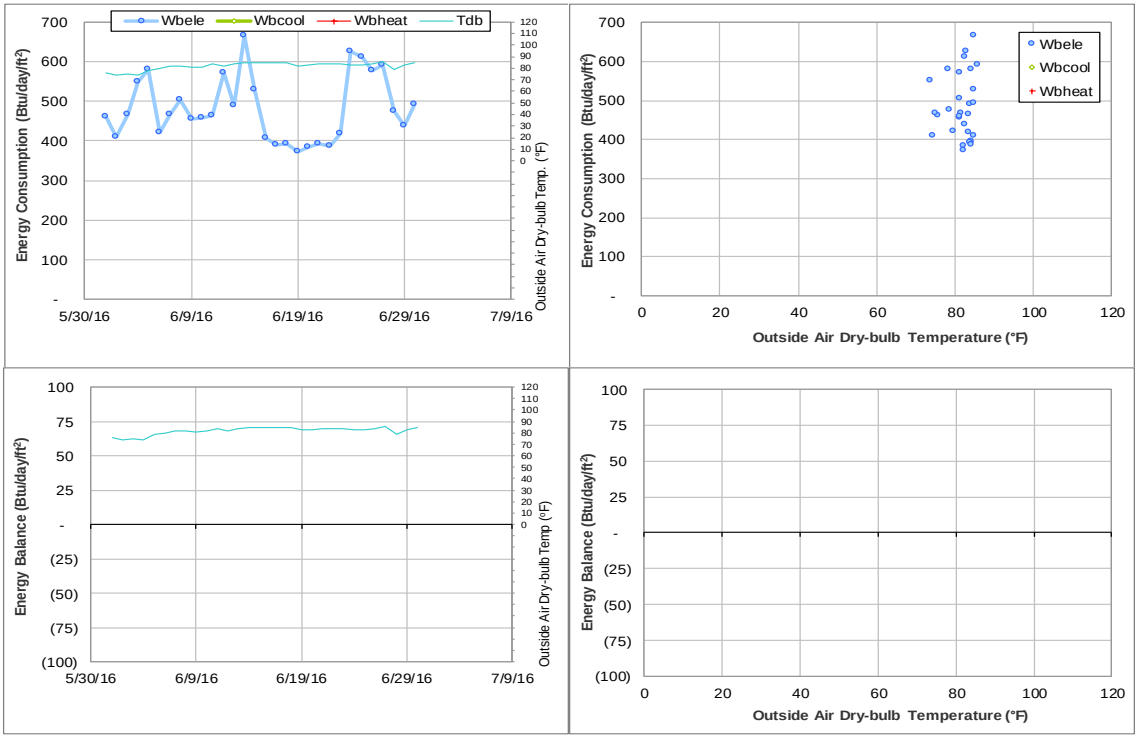


Figure IV-134 University Apartments - Laundry at the Gardens TAMU BLDG # 1450 Energy Balance Plot during June 2016

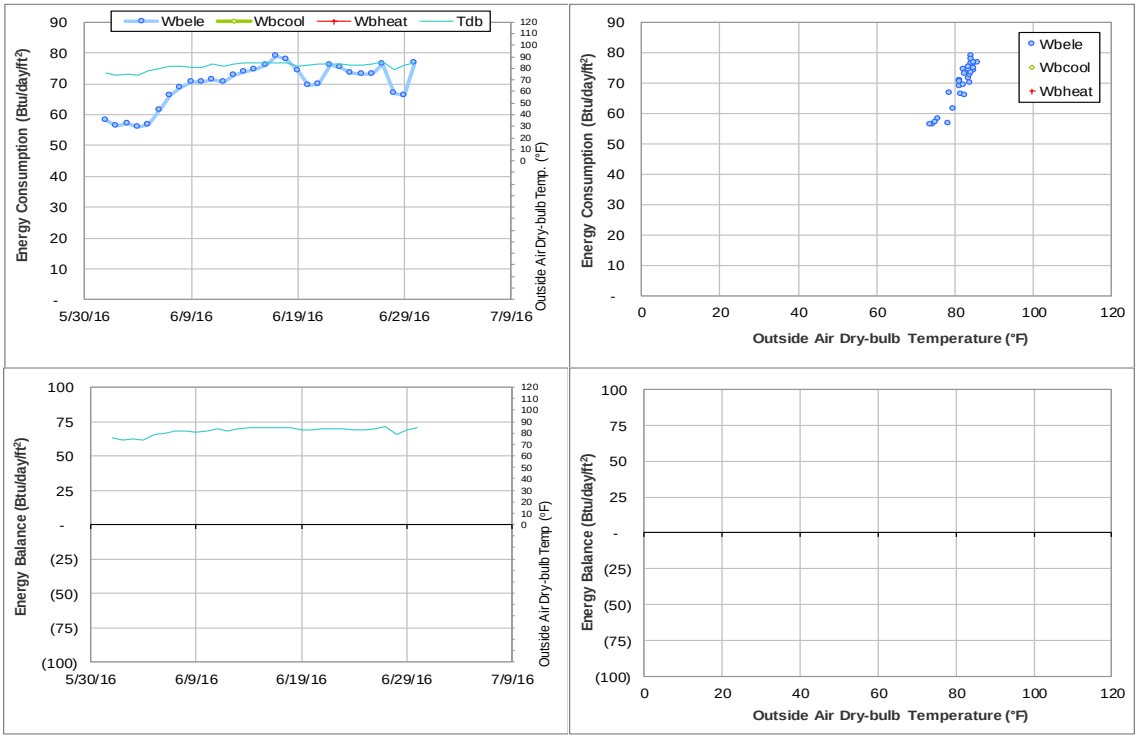


Figure IV-135 University Apartments - The Gardens J TAMU BLDG # 1451 Energy Balance Plot during June 2016

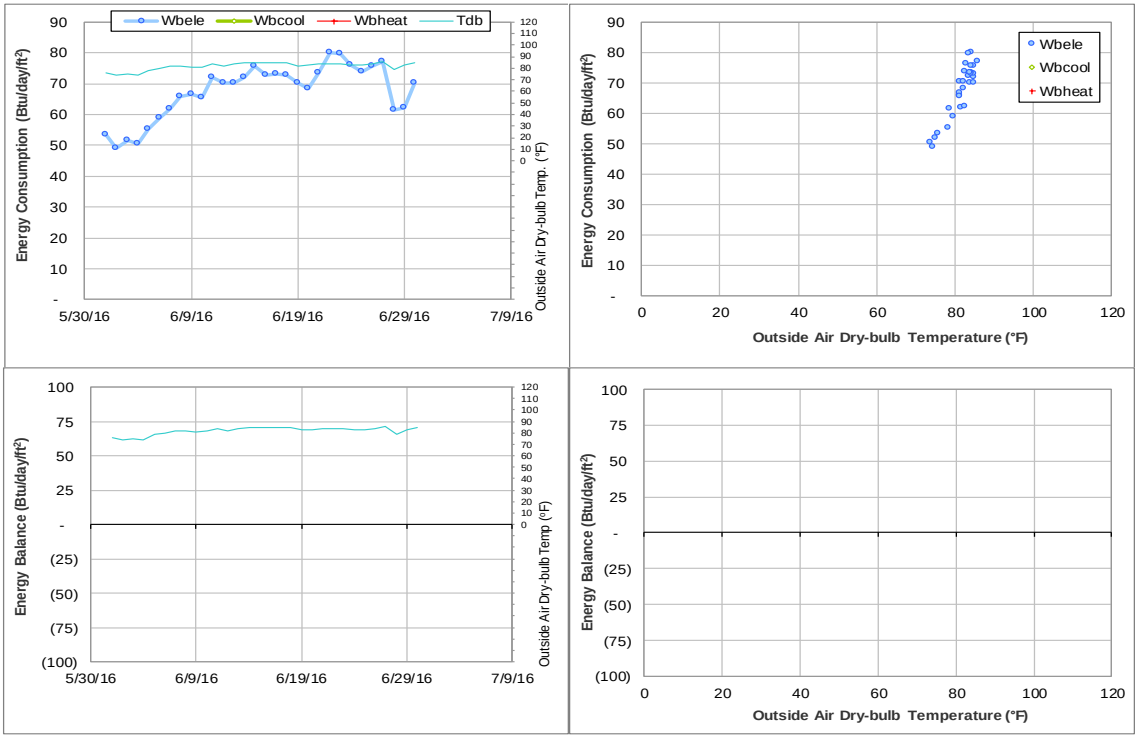


Figure IV-136 University Apartments - The Gardens L TAMU BLDG # 1453 Energy Balance Plot during June 2016

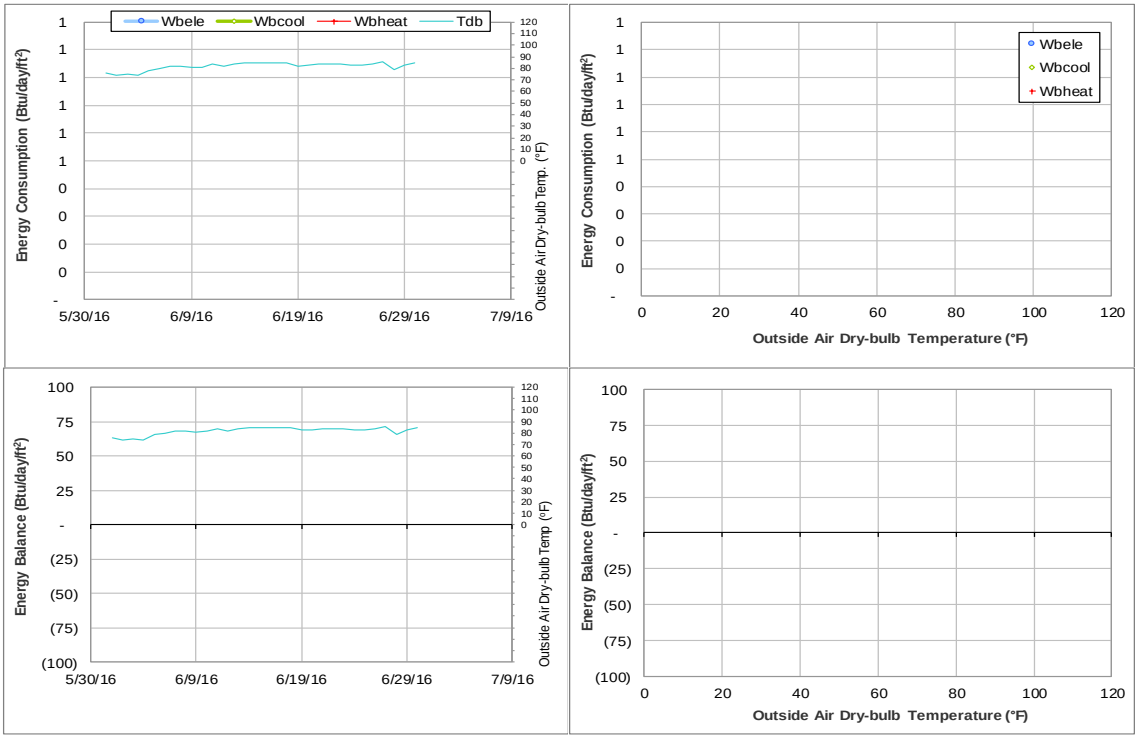


Figure IV-137 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during June 2016

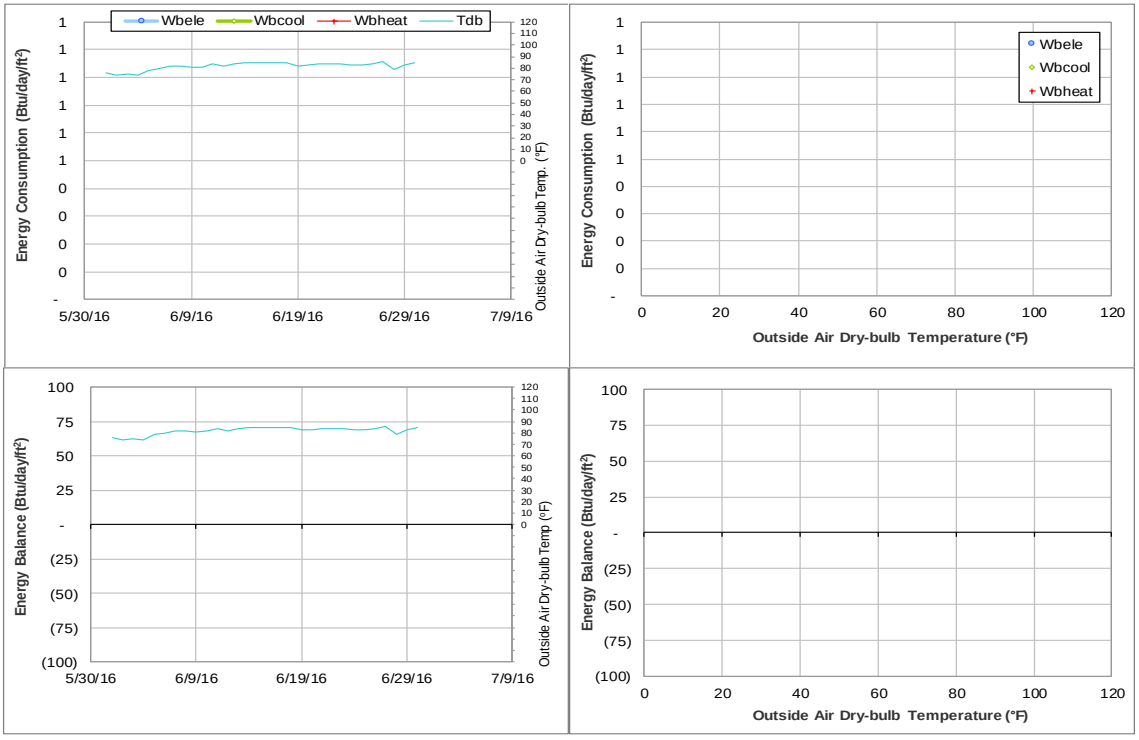


Figure IV-138 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during June 2016

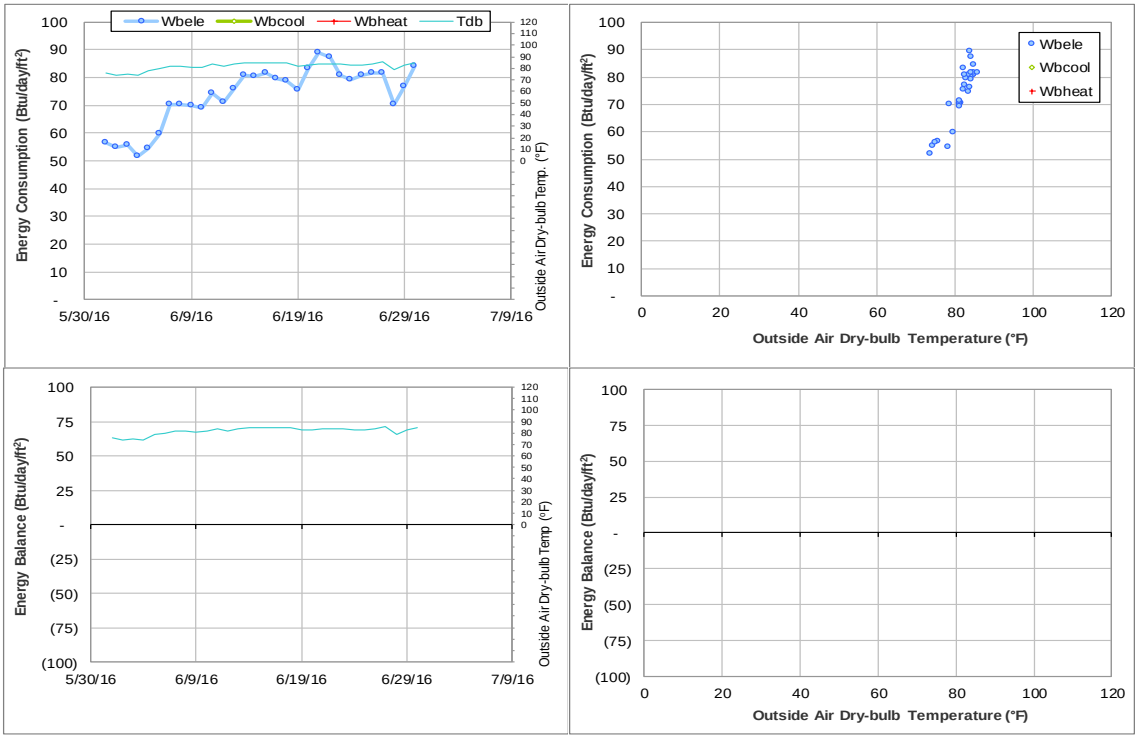


Figure IV-139 University Apartments - The Gardens H TAMU BLDG # 1456 Energy Balance Plot during June 2016

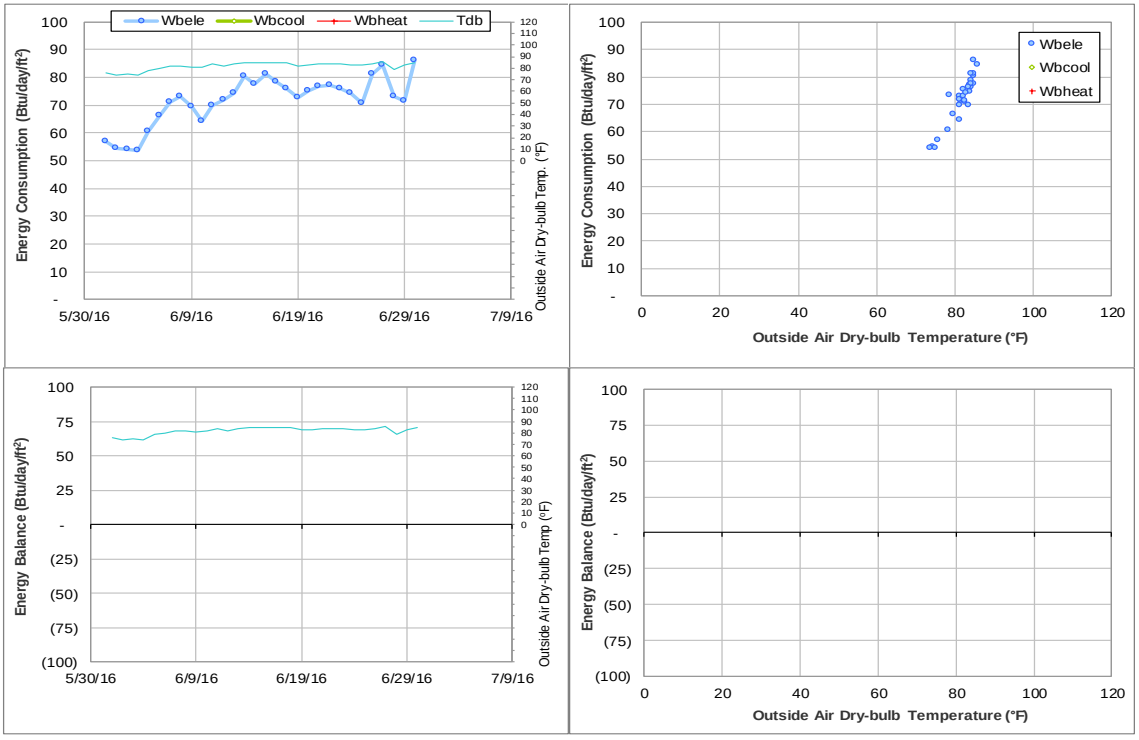


Figure IV-140 University Apartments - The Gardens M TAMU BLDG # 1457 Energy Balance Plot during June 2016

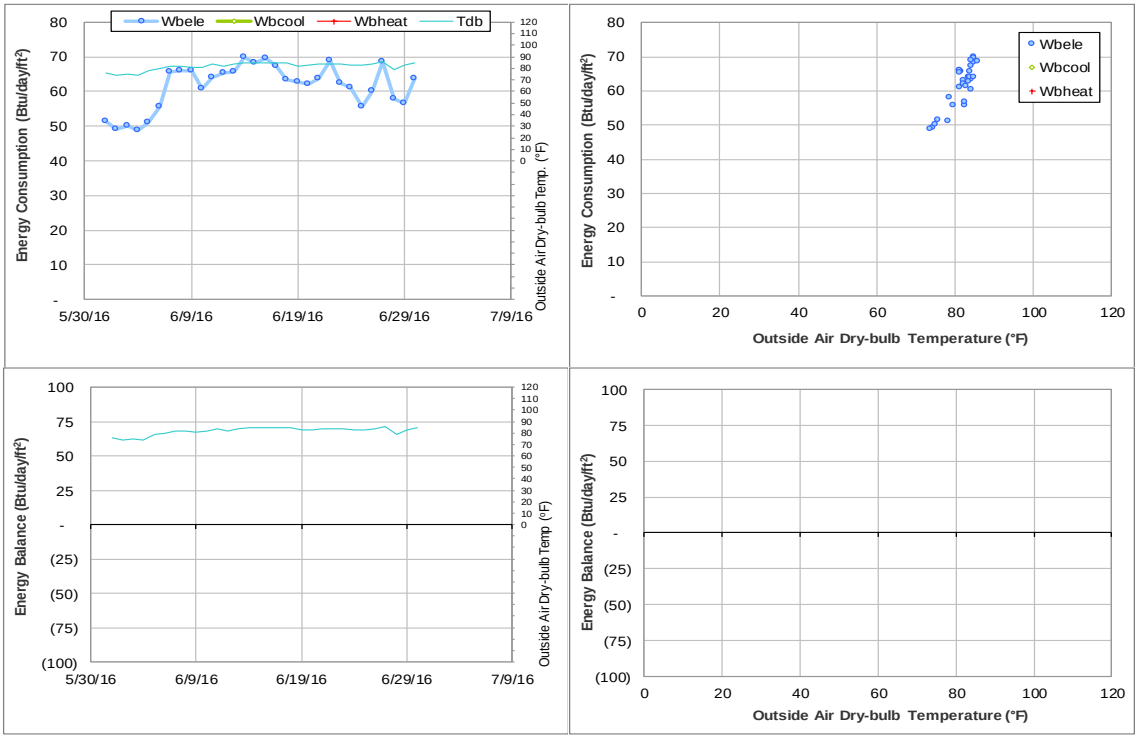


Figure IV-141 University Apartments - The Gardens N TAMU BLDG # 1458 Energy Balance Plot during June 2016

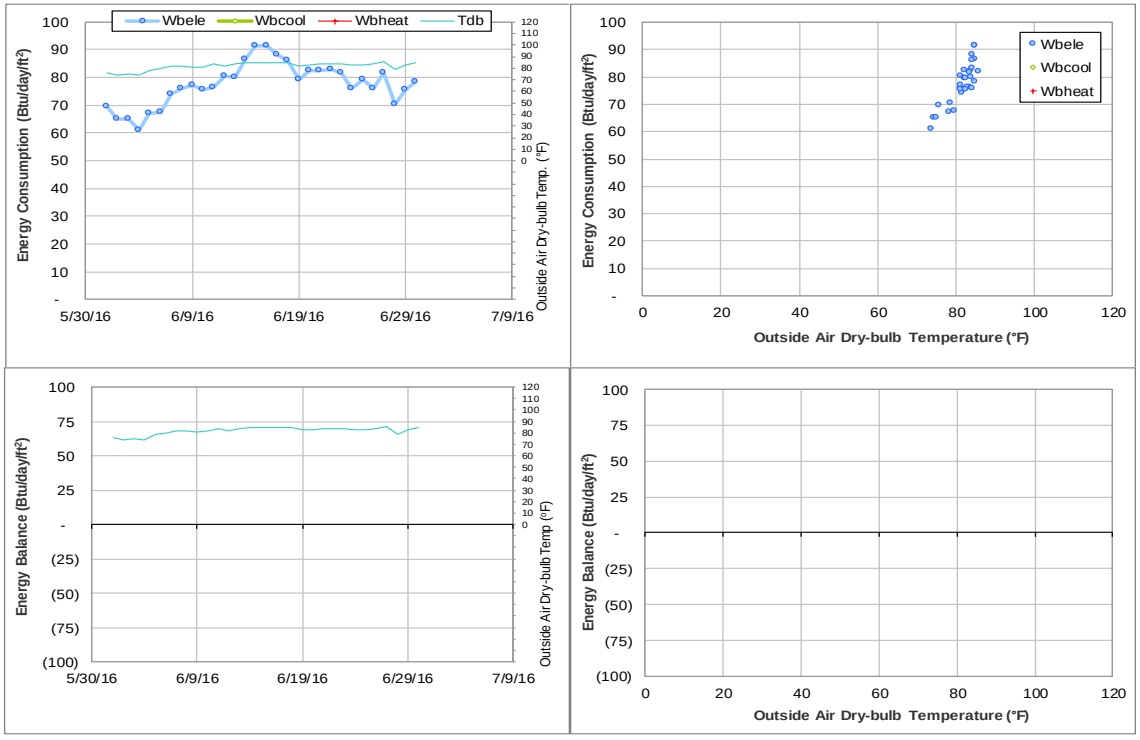


Figure IV-142 University Apartments - The Gardens P TAMU BLDG # 1459 Energy Balance Plot during June 2016

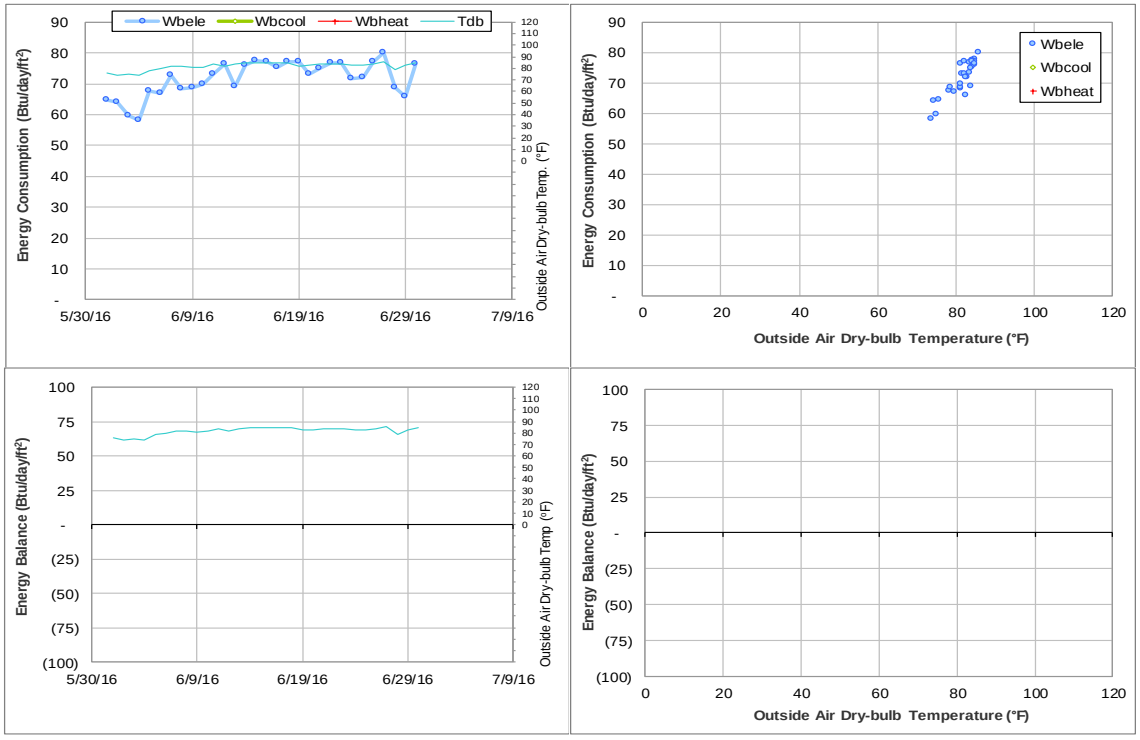


Figure IV-143 University Apartments - The Gardens Q TAMU BLDG # 1460 Energy Balance Plot during June 2016

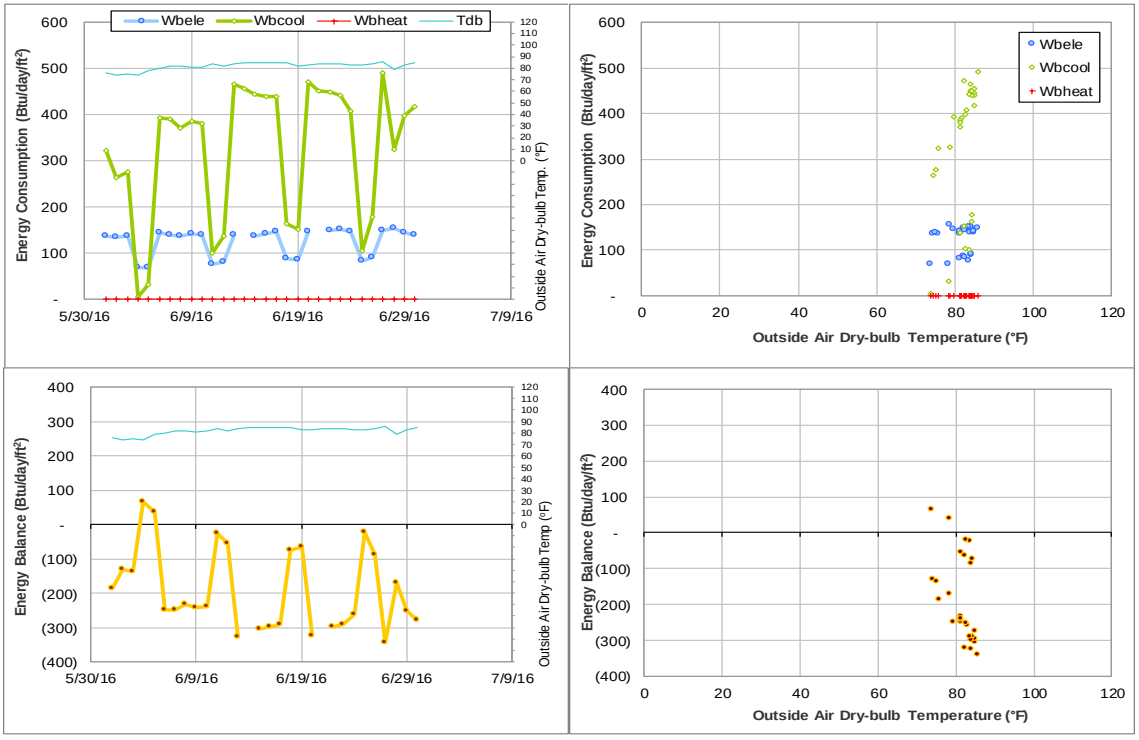


Figure IV-144 Utilities & Energy Services Business Office TAMU BLDG # 1497 Energy Balance Plot during June 2016

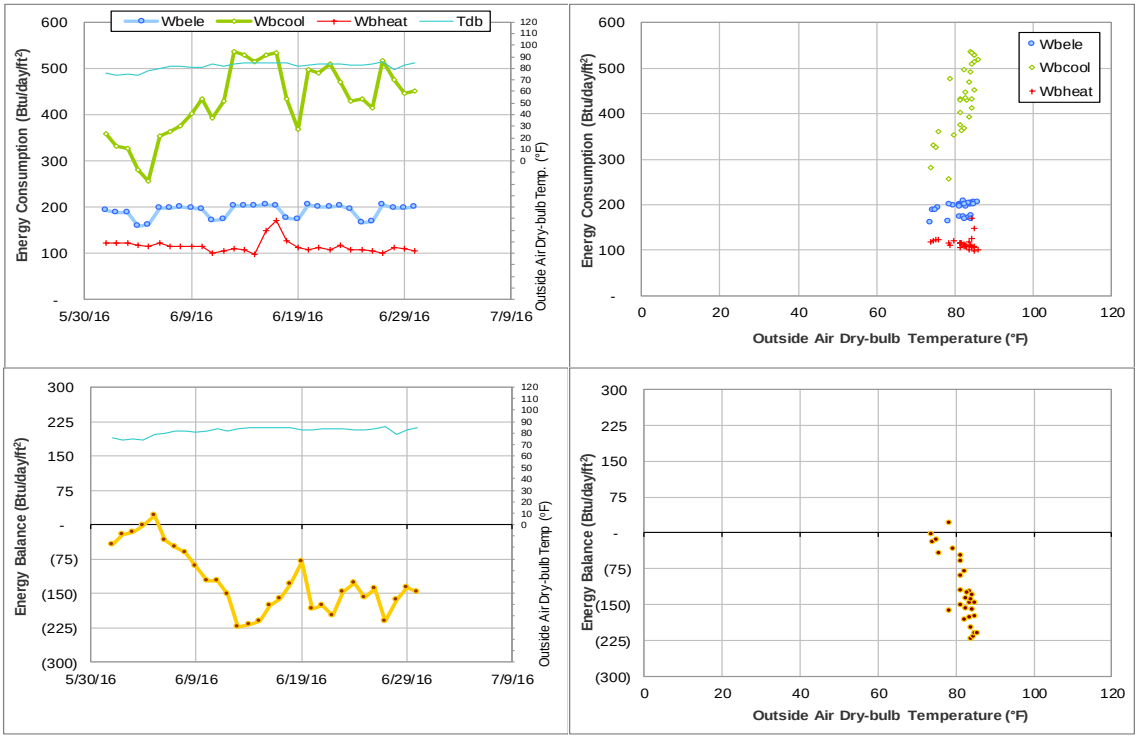


Figure IV-145 Kleberg Center TAMU BLDG # 1501 Energy Balance Plot during June 2016

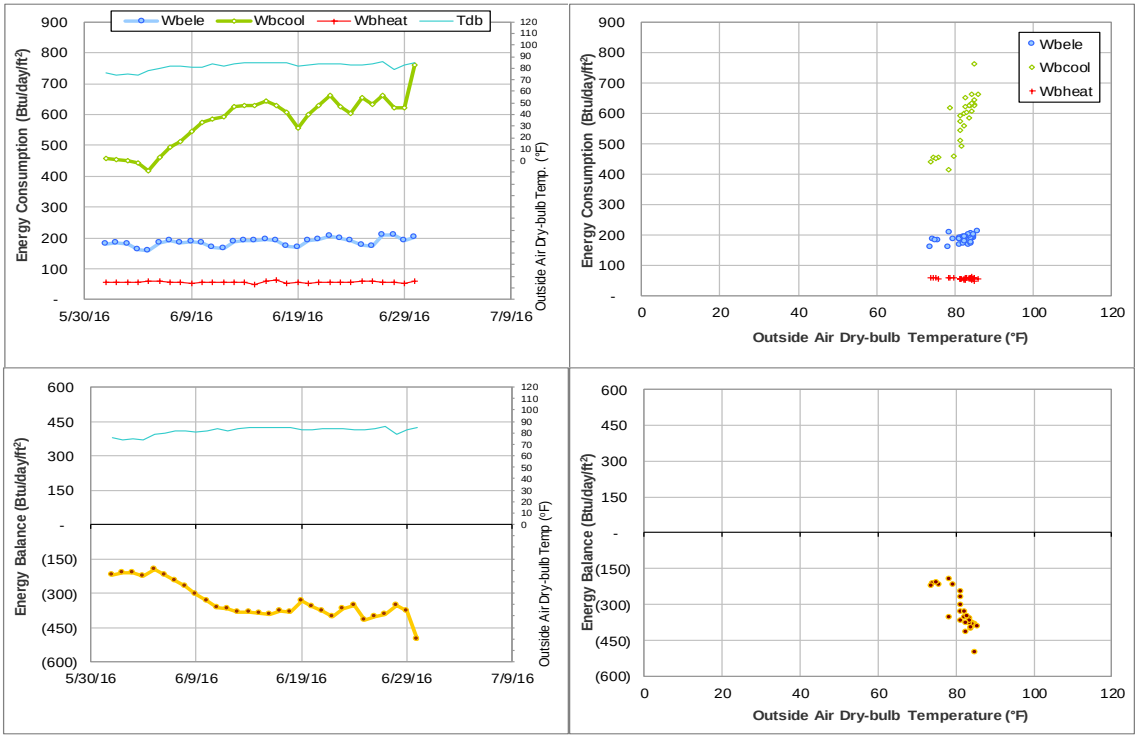


Figure IV-146 Heep Center TAMU BLDG # 1502 Energy Balance Plot during June 2016

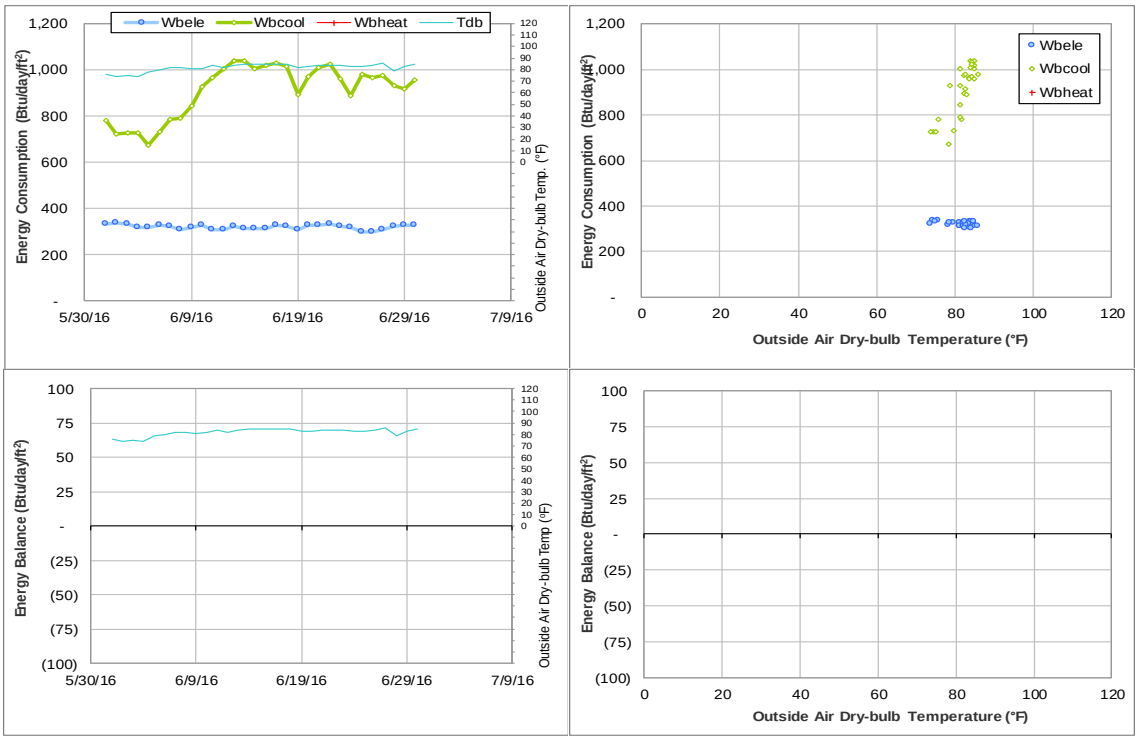


Figure IV-147 Cater-Mattil Hall TAMU BLDG # 1503 Energy Balance Plot during June 2016

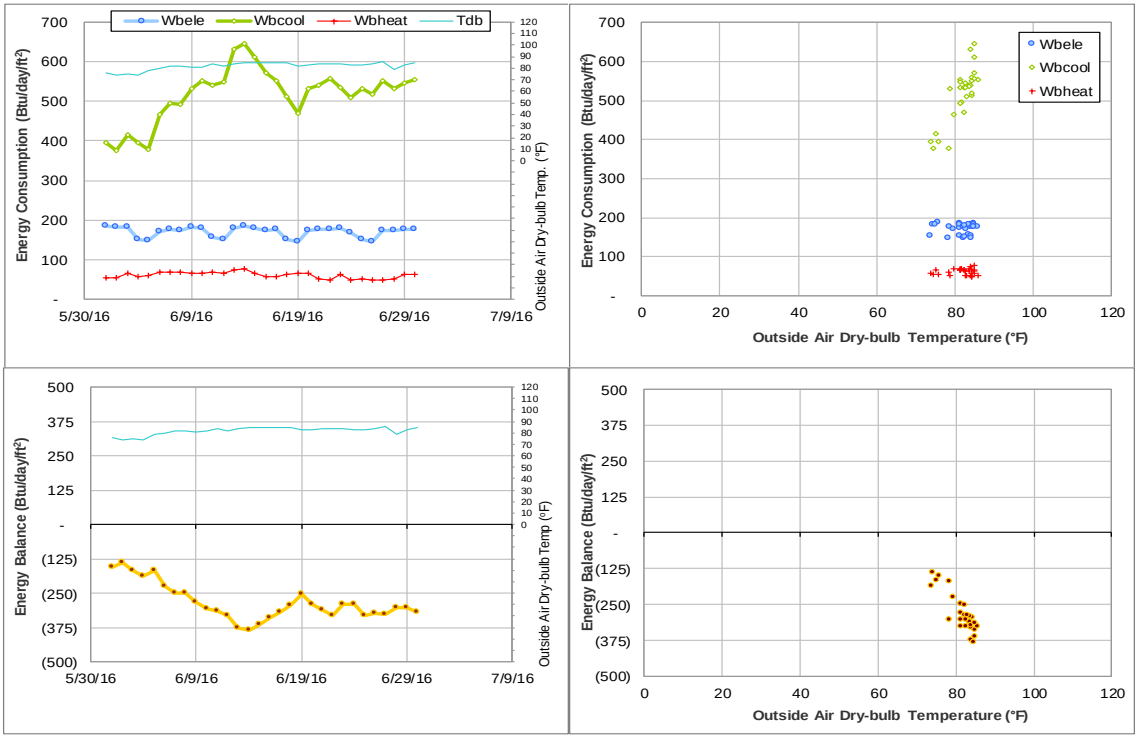


Figure IV-148 Reynolds Medical Sciences Building TAMU BLDG # 1504 Energy Balance Plot during June 2016

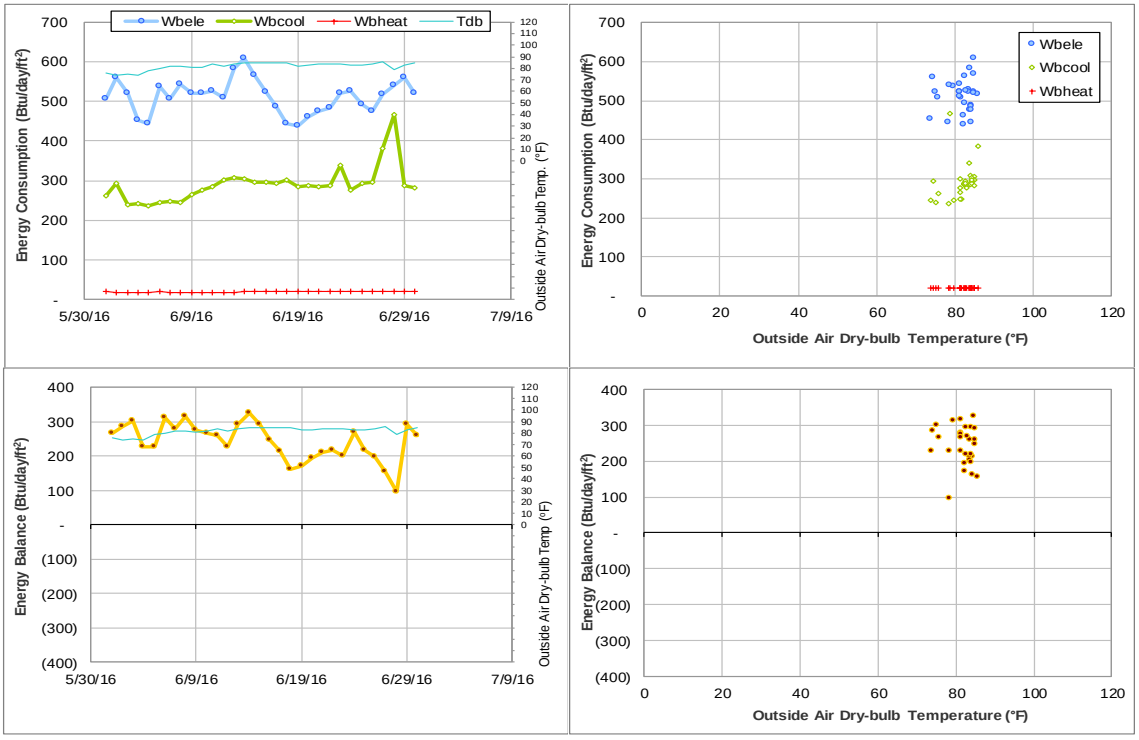


Figure IV-149 Rosenthal Meat Science & Technology Center TAMU BLDG # 1505 Energy Balance Plot during June 2016

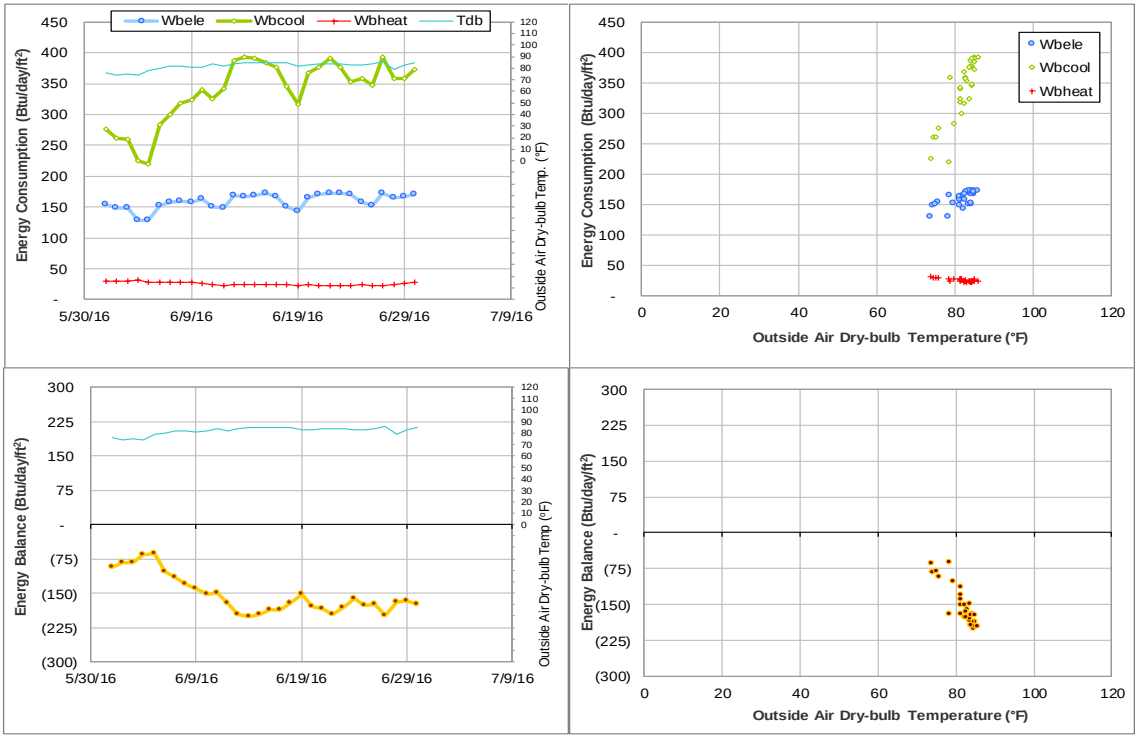


Figure IV-150 Horticulture-Forest Science Building TAMU BLDG # 1506 Energy Balance Plot during June 2016

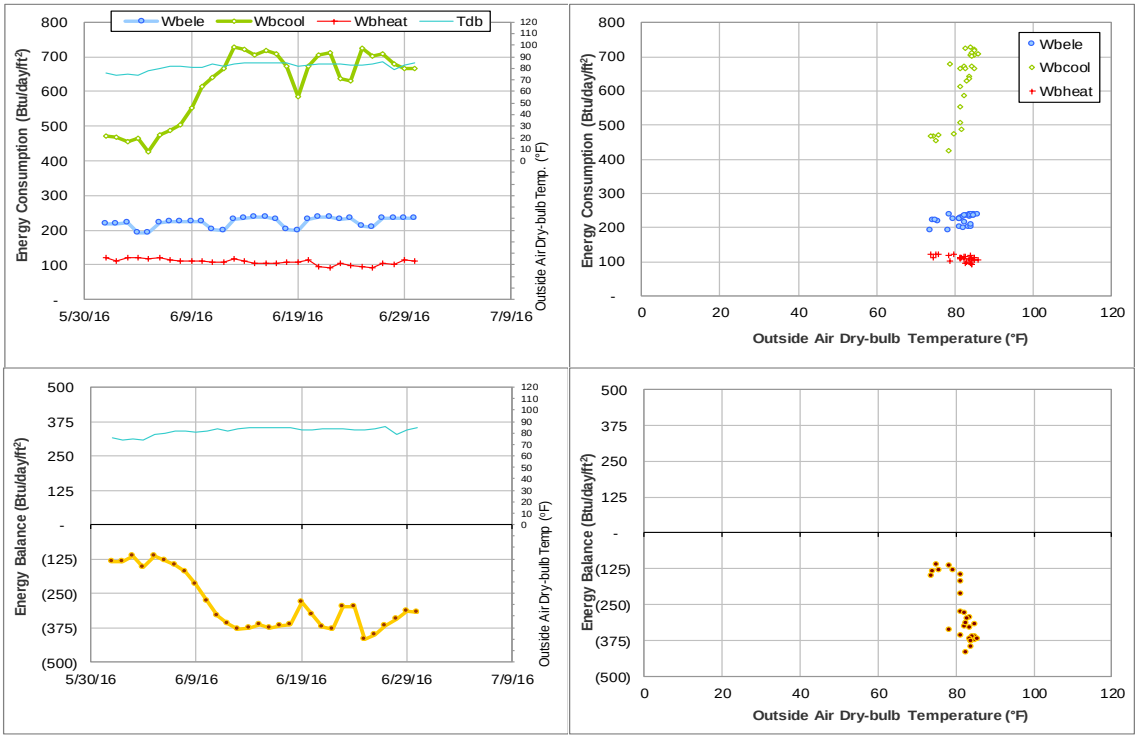


Figure IV-151 Biochemistry-Biophysics Building TAMU BLDG # 1507 Energy Balance Plot during June 2016

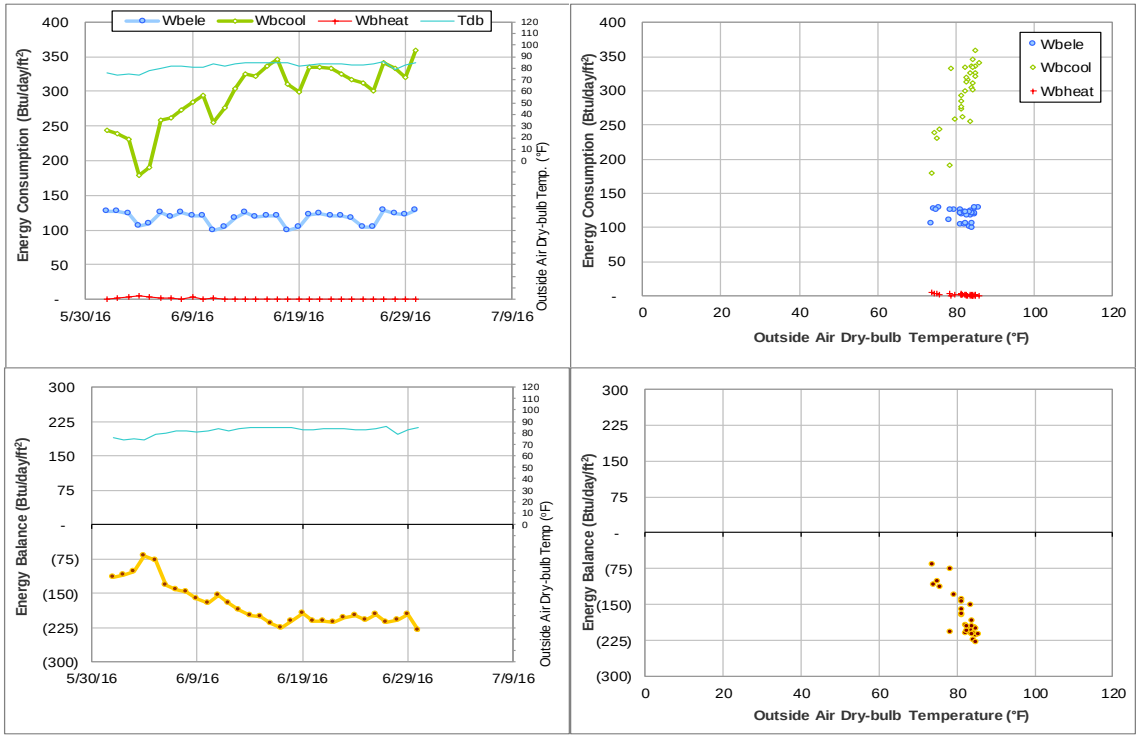


Figure IV-152 Price Hobgood Ag. Engineering Research Lab TAMU BLDG # 1508 Energy Balance Plot during June 2016

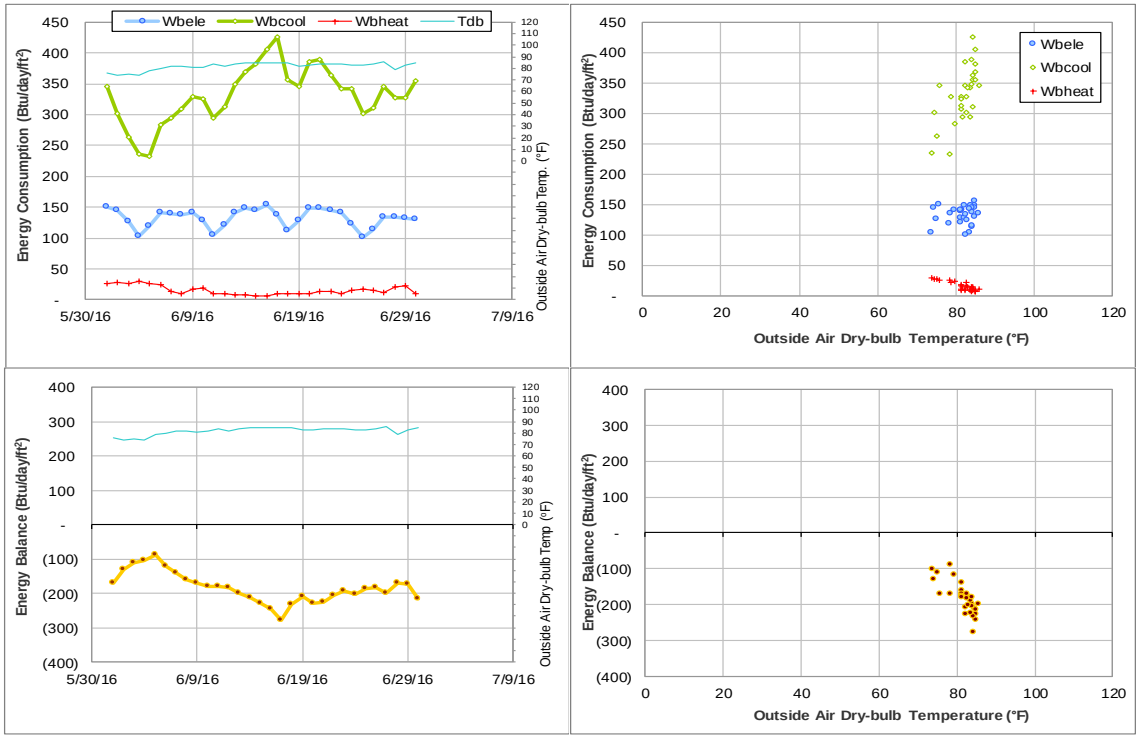


Figure IV-153 Medical Sciences Library TAMU BLDG # 1509 Energy Balance Plot during June 2016

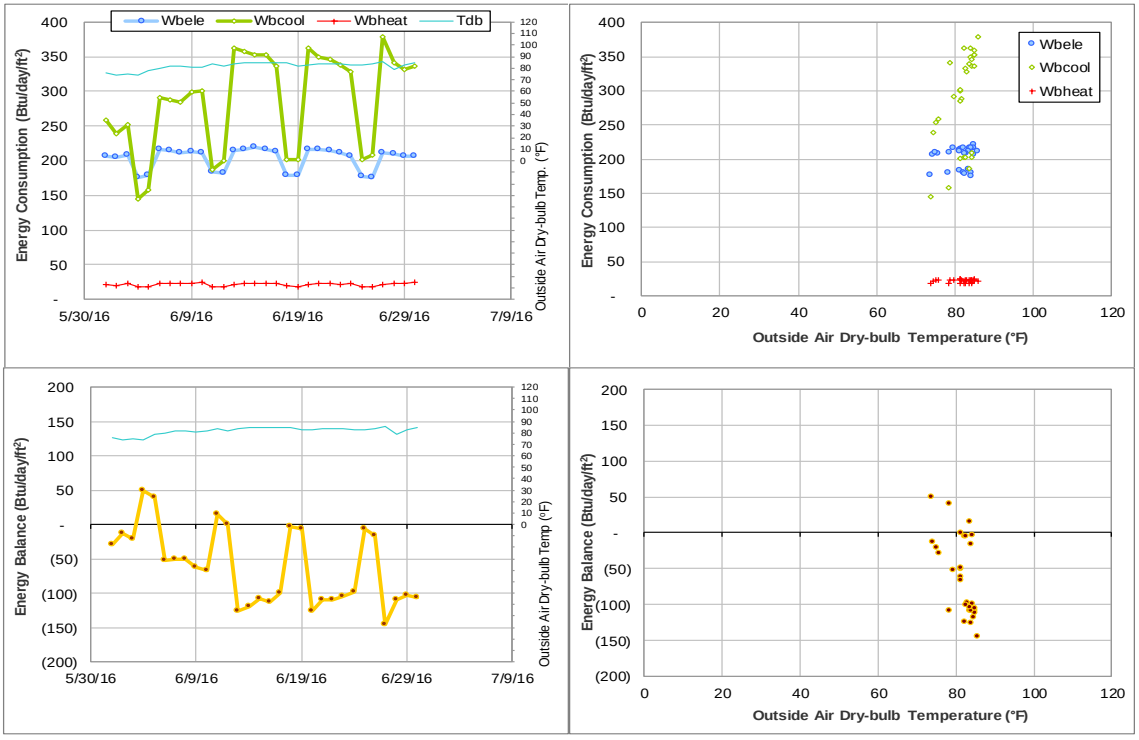


Figure IV-154 Wehner Building TAMU BLDG # 1510 Energy Balance Plot during June 2016

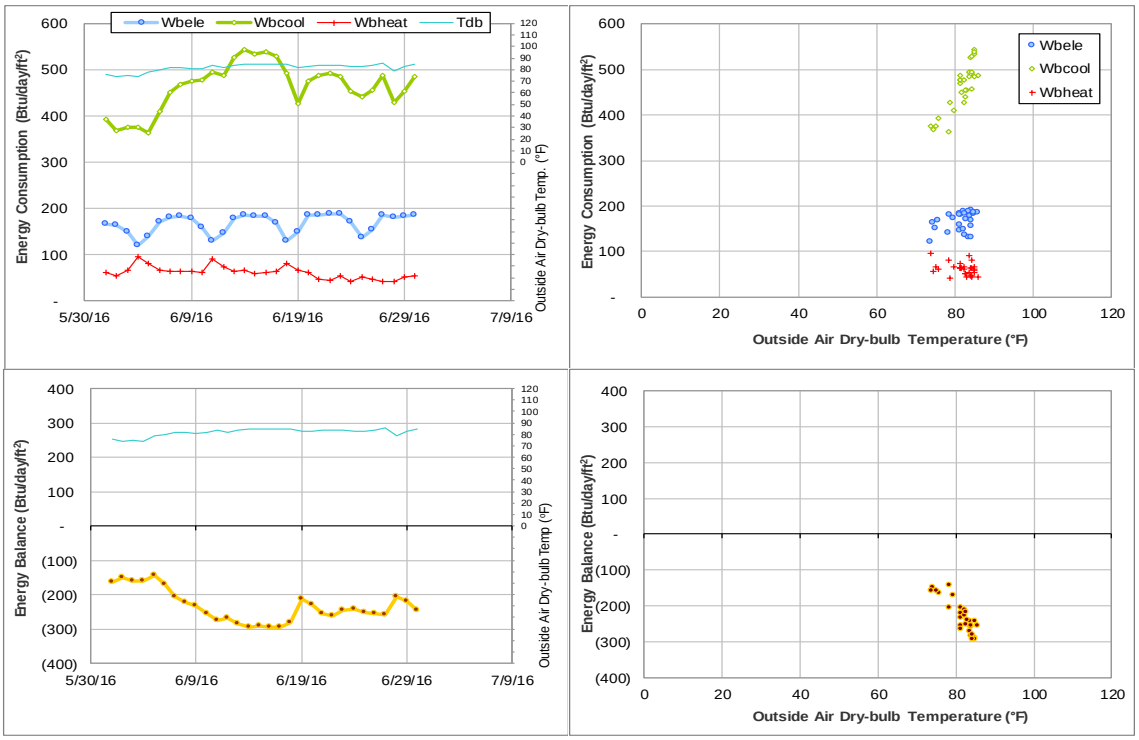


Figure IV-155 West Campus Library Facility TAMU BLDG # 1511 Energy Balance Plot during June 2016

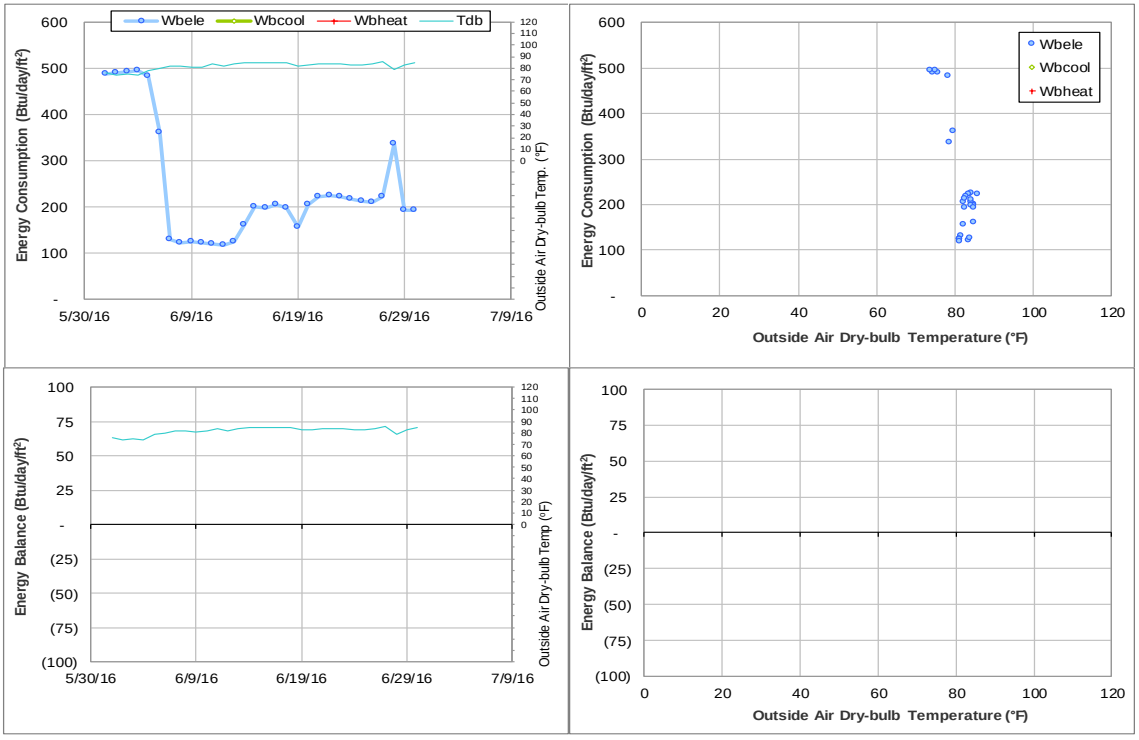


Figure IV-156 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during June 2016

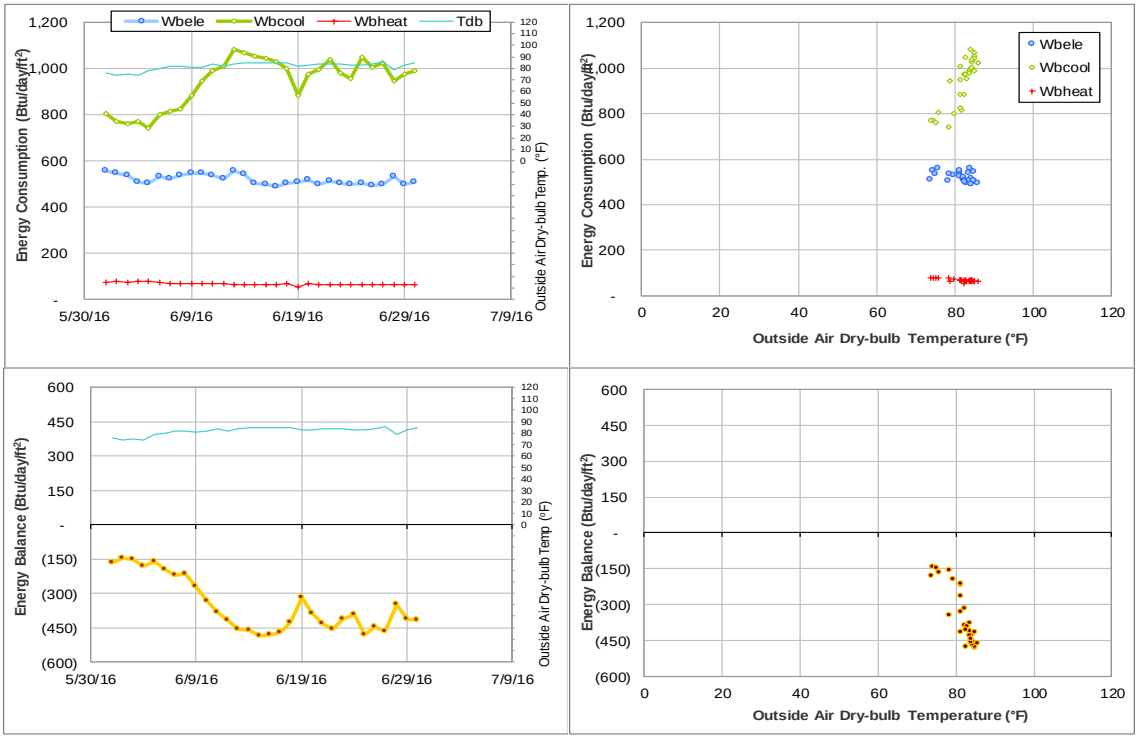


Figure IV-157 Borlaug Center for Southern Crop Improvement TAMU BLDG # 1513 Energy Balance Plot during June 2016

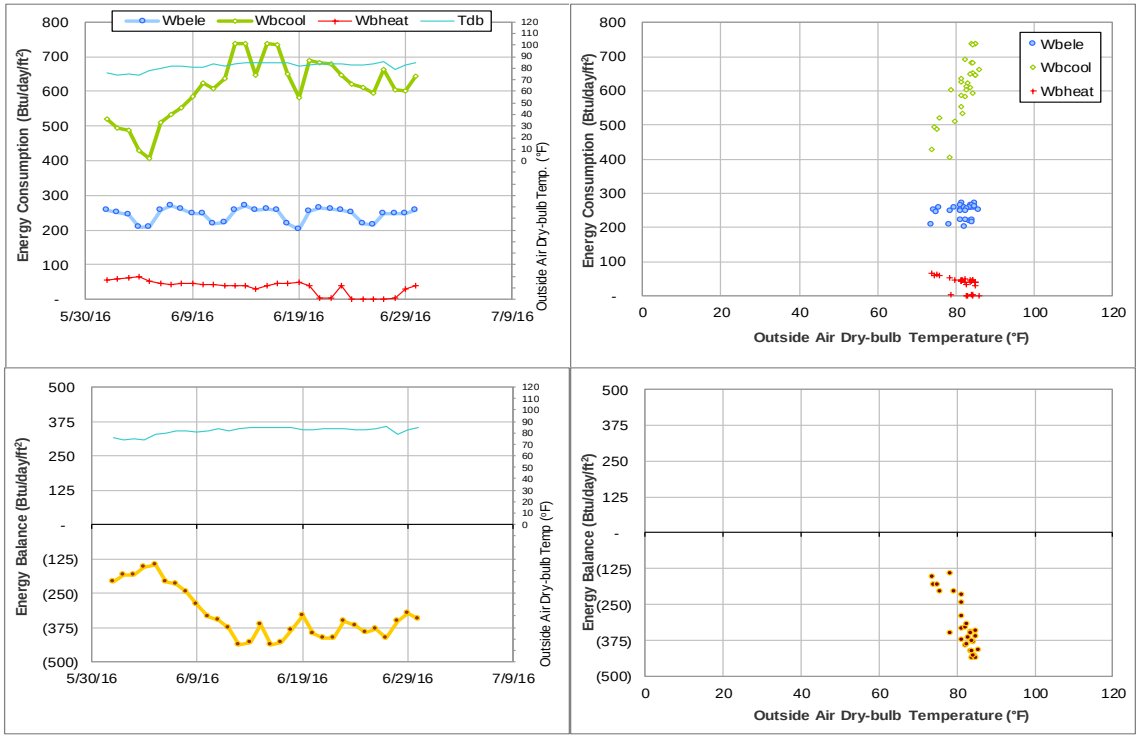


Figure IV-158 TX School of Rural Public Health TAMU BLDG # 1518 Energy Balance Plot during June 2016

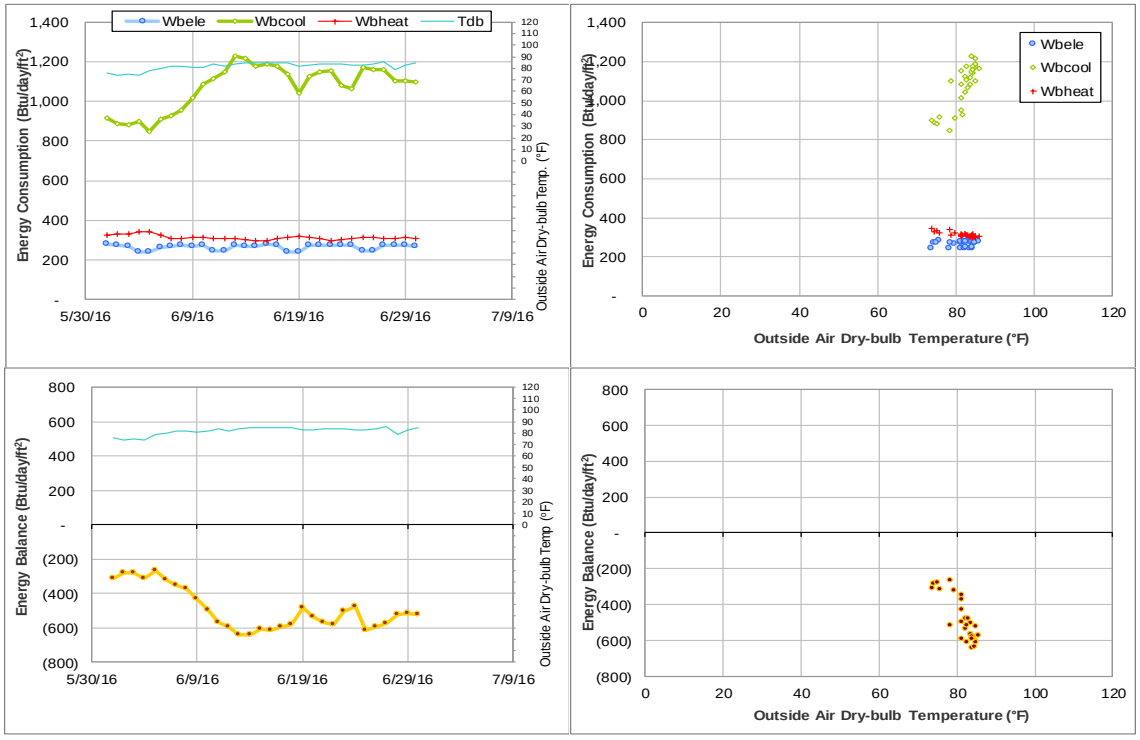


Figure IV-159 Nuclear Magnetic Resonance Facility TAMU BLDG # 1525 Energy Balance Plot during June 2016

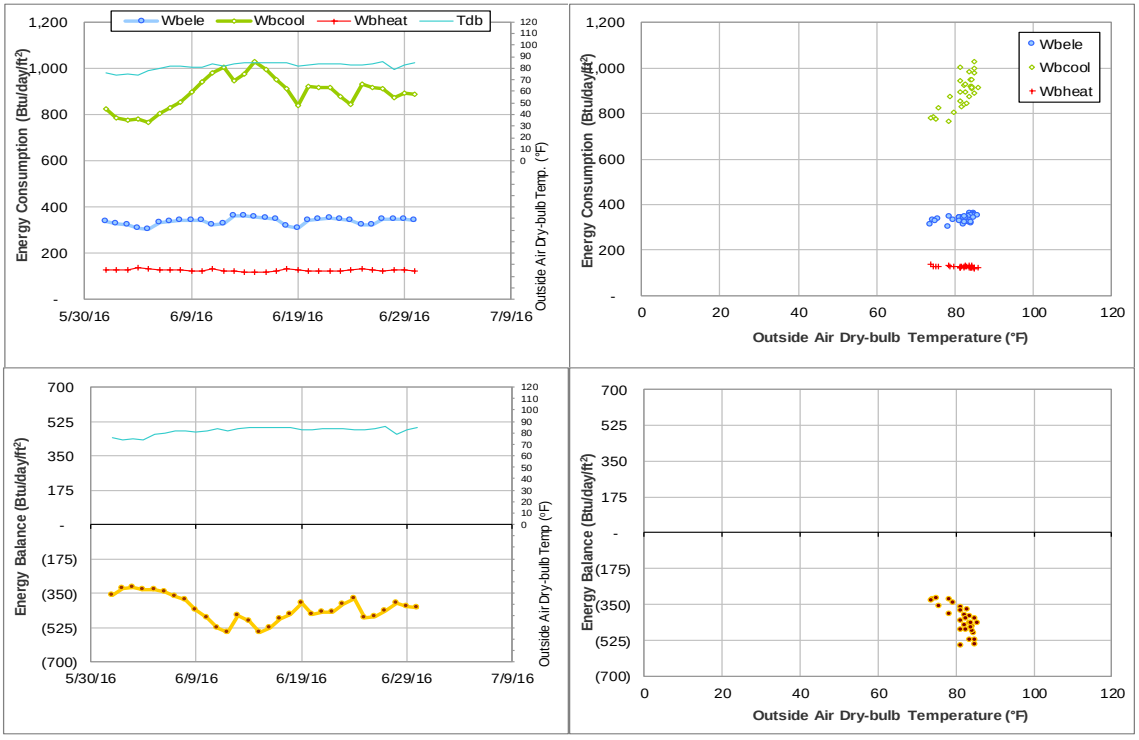


Figure IV-160 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during June 2016

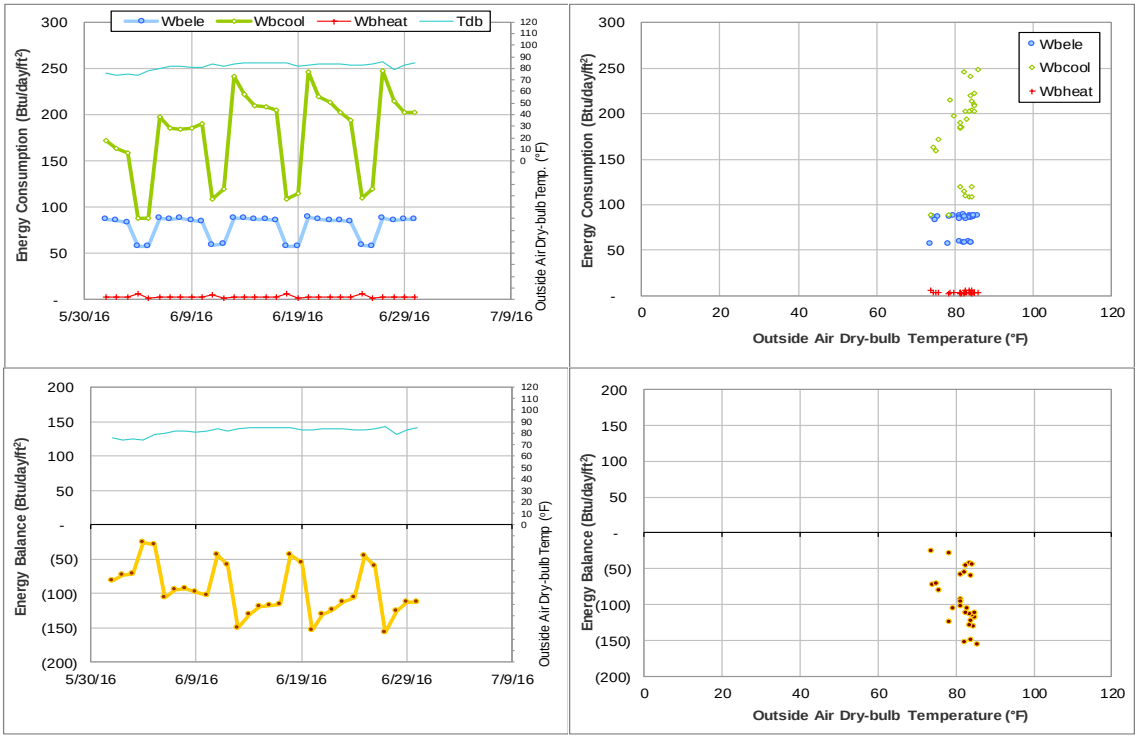


Figure IV-161 Agriculture and Life Sciences Building TAMU BLDG # 1535 Energy Balance Plot during June 2016

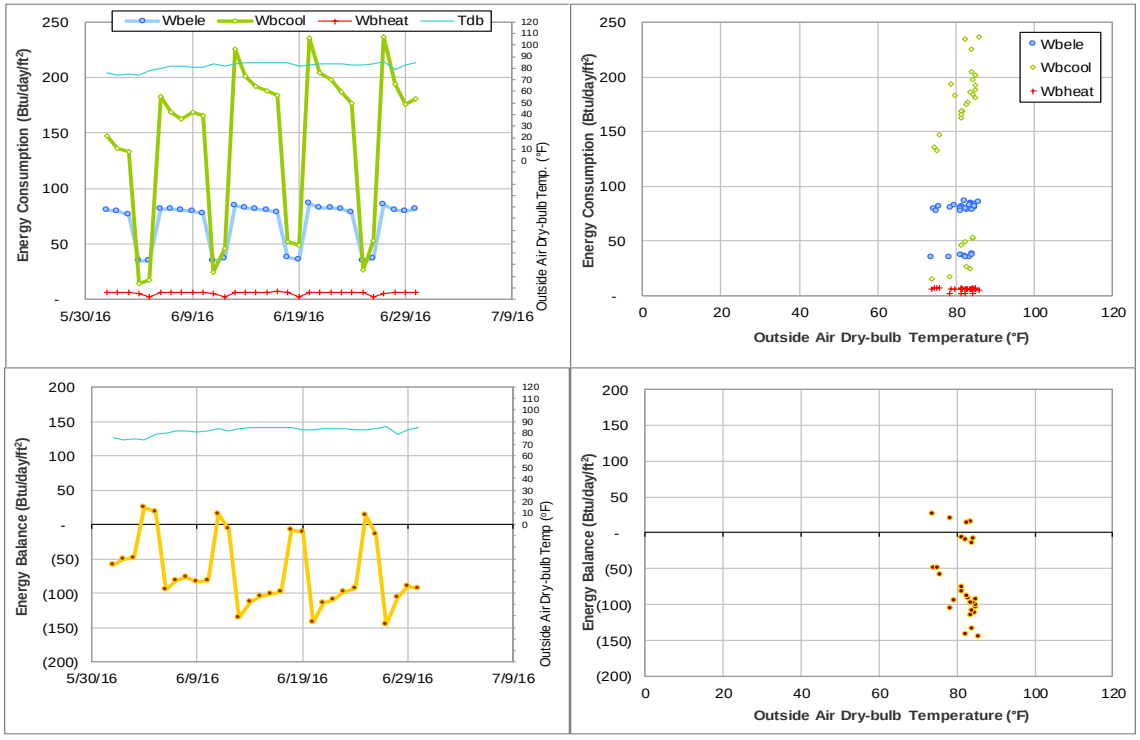


Figure IV-162 AgriLife Services Building TAMU BLDG # 1536 Energy Balance Plot during June 2016

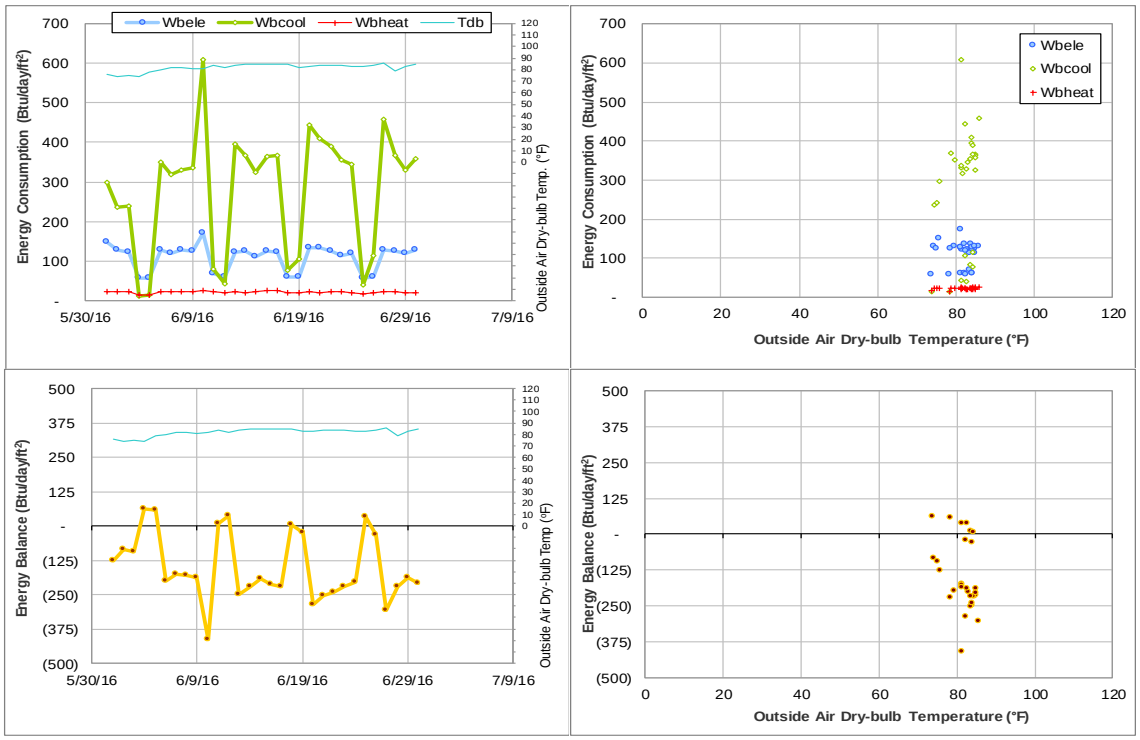


Figure IV-163 Agriculture Program Visitors Center TAMU BLDG # 1538 Energy Balance Plot during June 2016

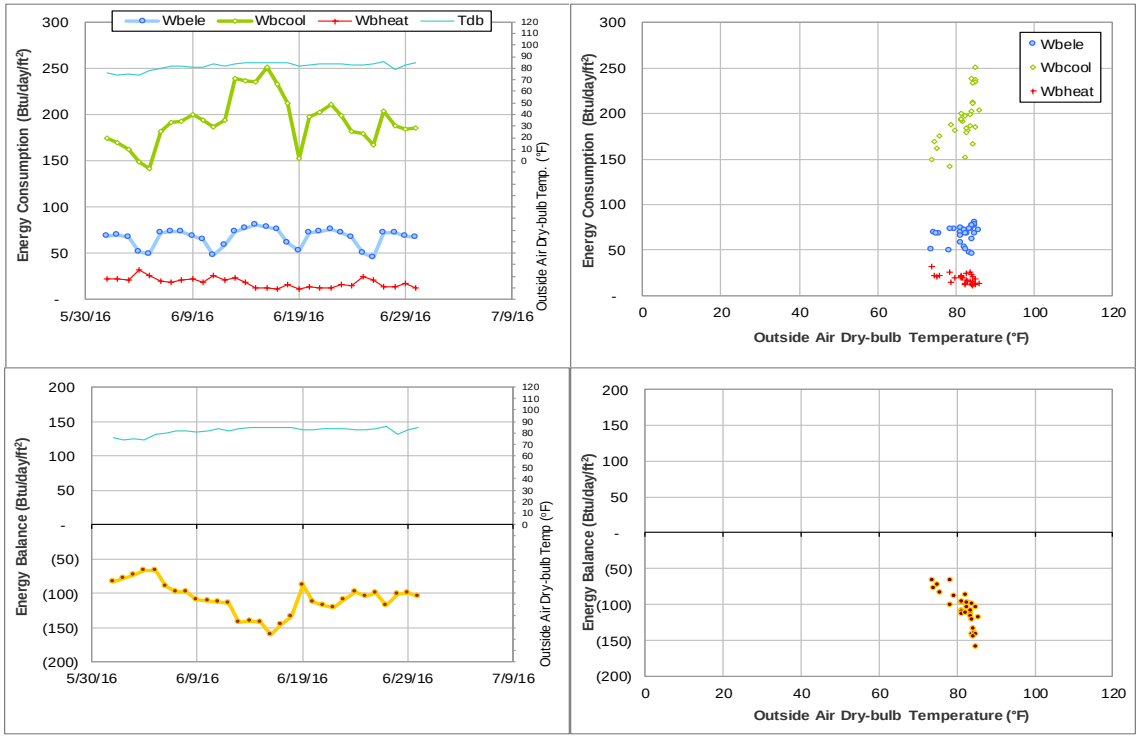


Figure IV-164 Physical Education Activity Program Building TAMU BLDG # 1540 Energy Balance Plot during June 2016

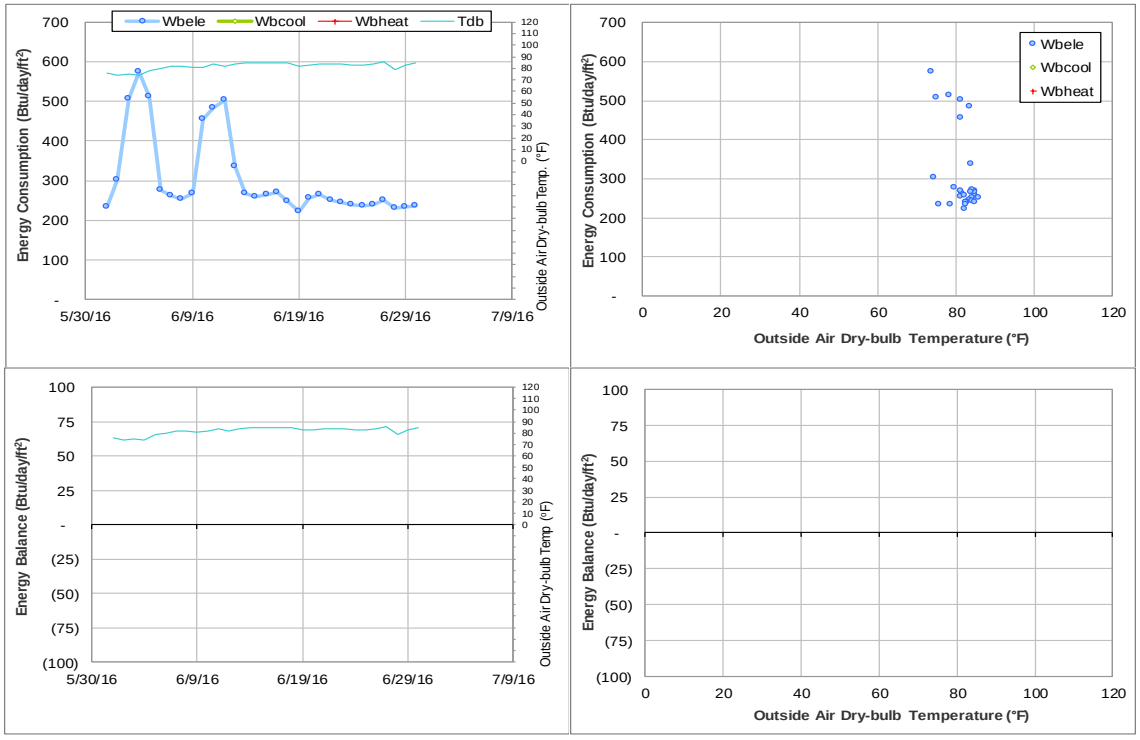


Figure IV-165 Olsen Field at Bluebell Park TAMU BLDG # 1550 Energy Balance Plot during June 2016

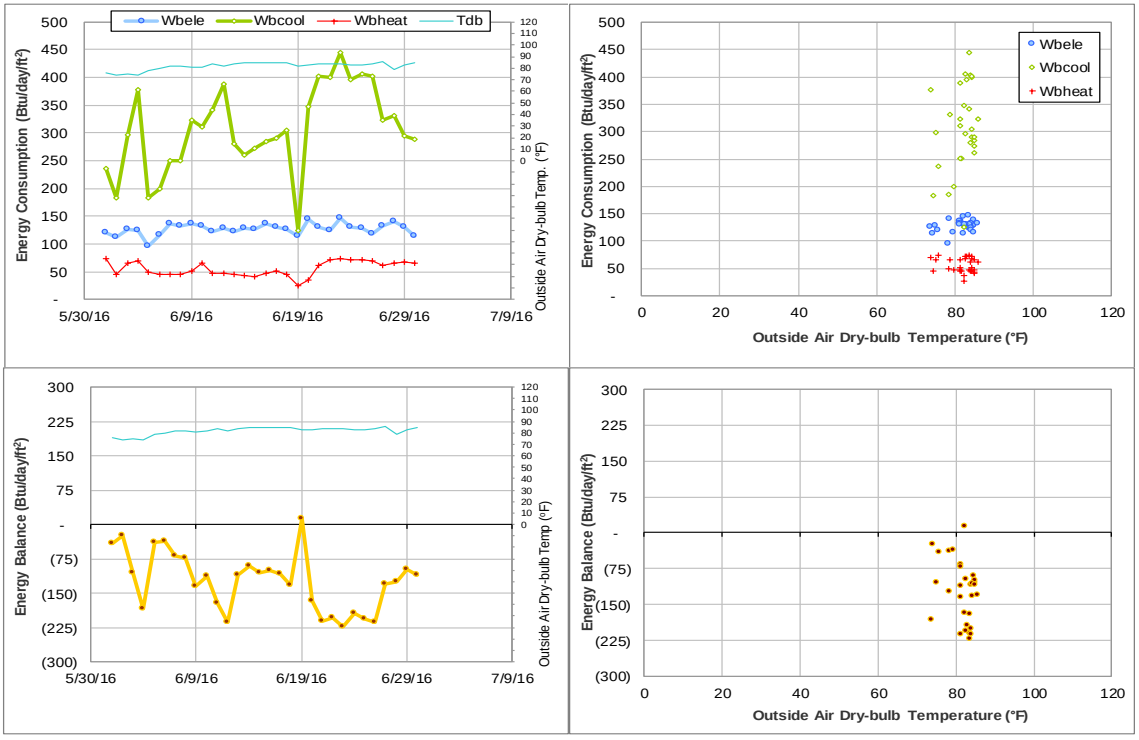


Figure IV-166 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 and 1558 Energy Balance Plot during June 2016

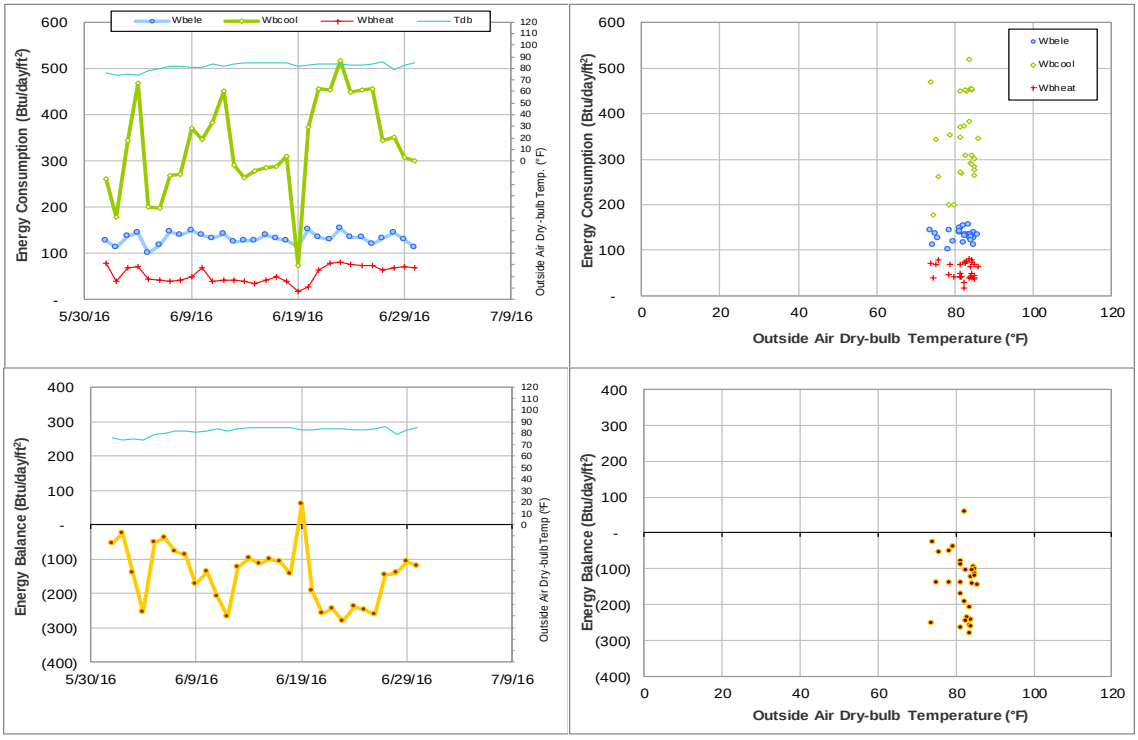


Figure IV-167 Reed Arena TAMU BLDG # 1554 Energy Balance Plot during June 2016

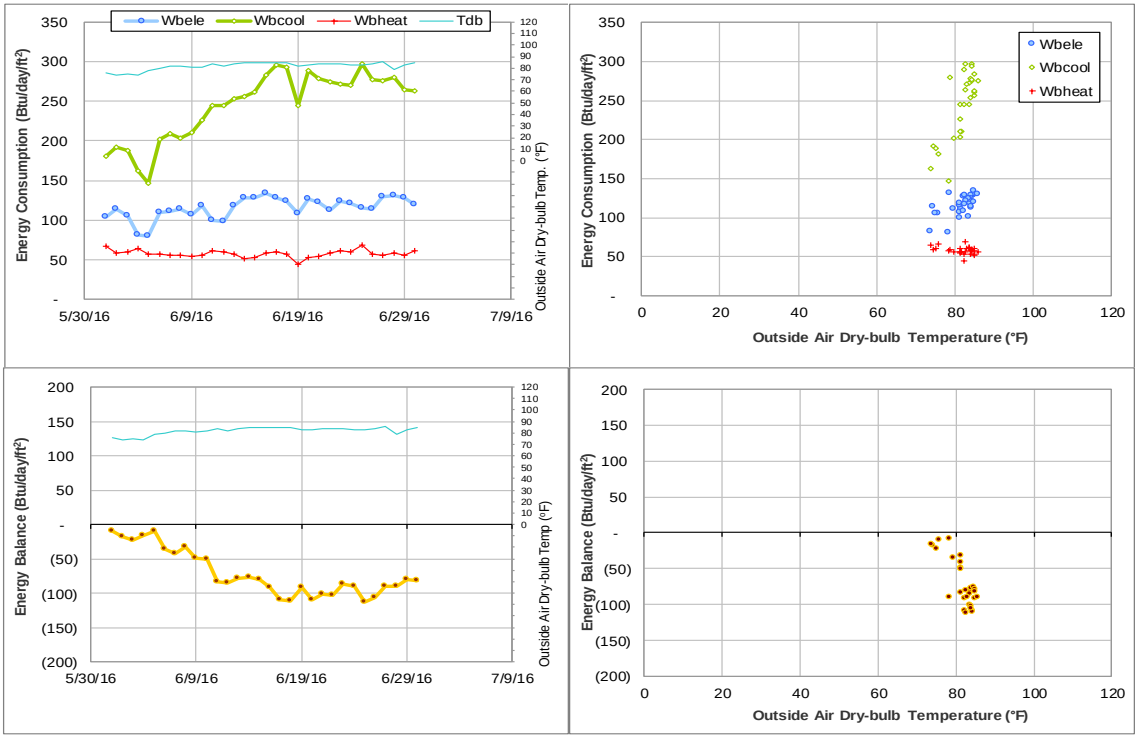


Figure IV-168 Cox-McFerrin Center for Aggie Basketball TAMU BLDG # 1558 Energy Balance Plot during June 2016

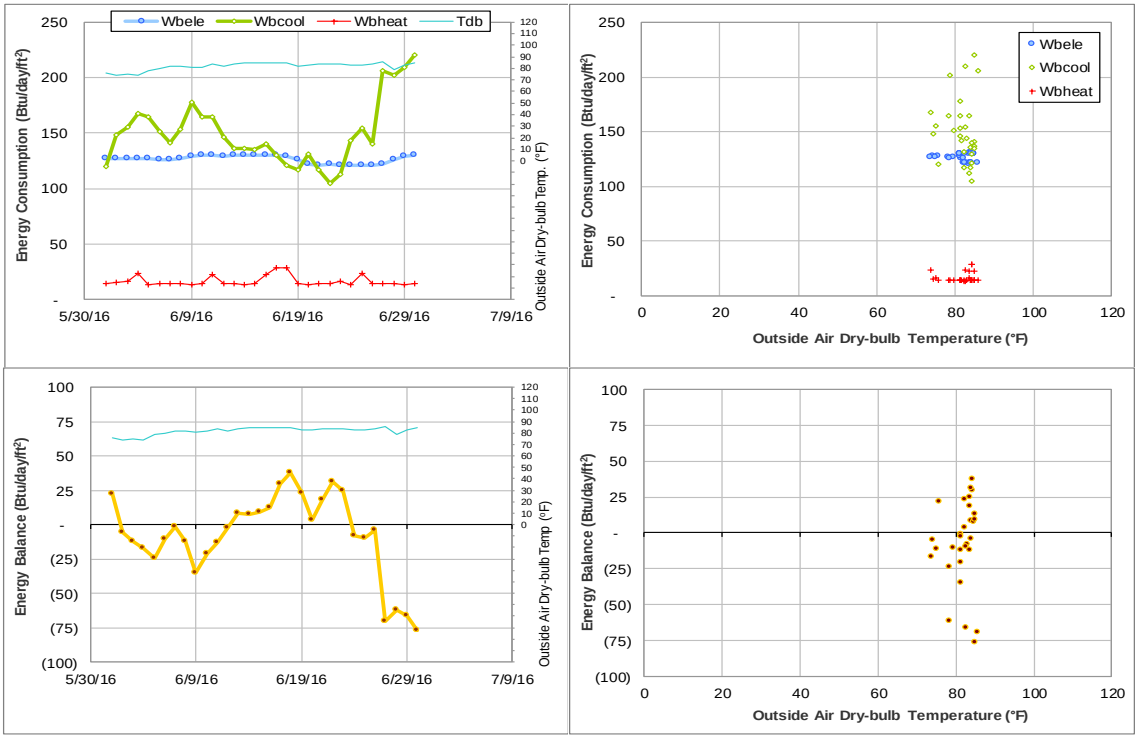


Figure IV-169 West Campus Parking Garage TAMU BLDG # 1559 Energy Balance Plot during June 2016

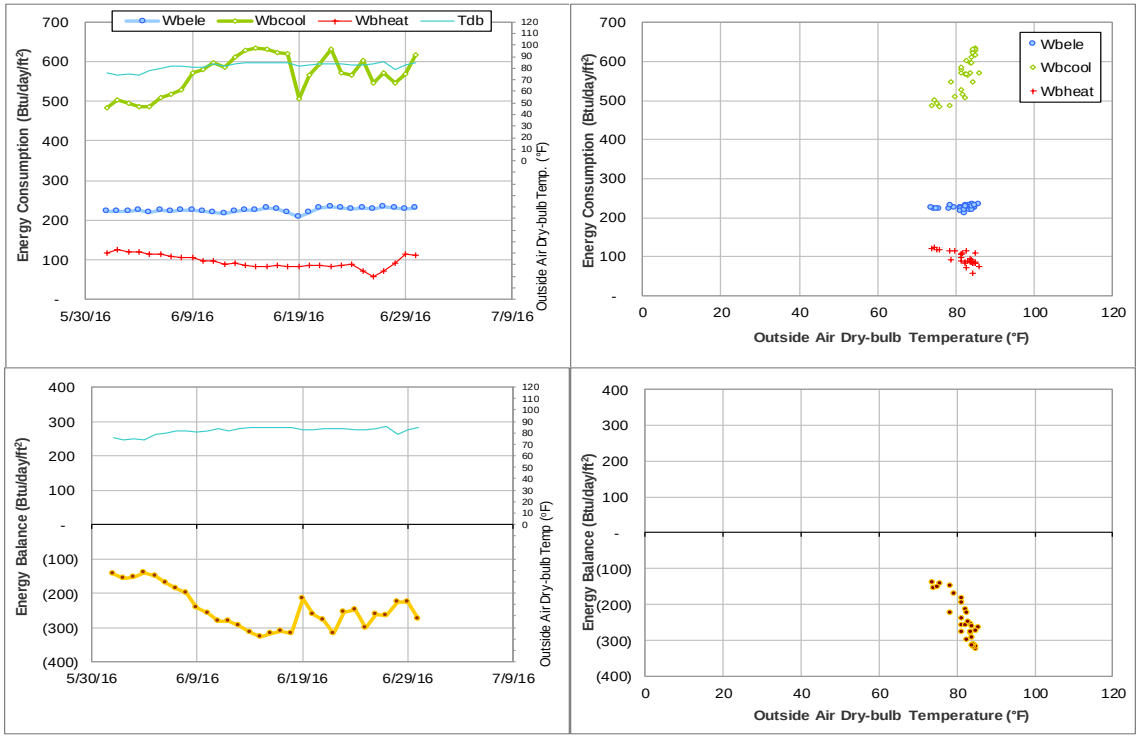


Figure IV-170 Student Recreation Center TAMU BLDG # 1560 Energy Balance Plot during June 2016

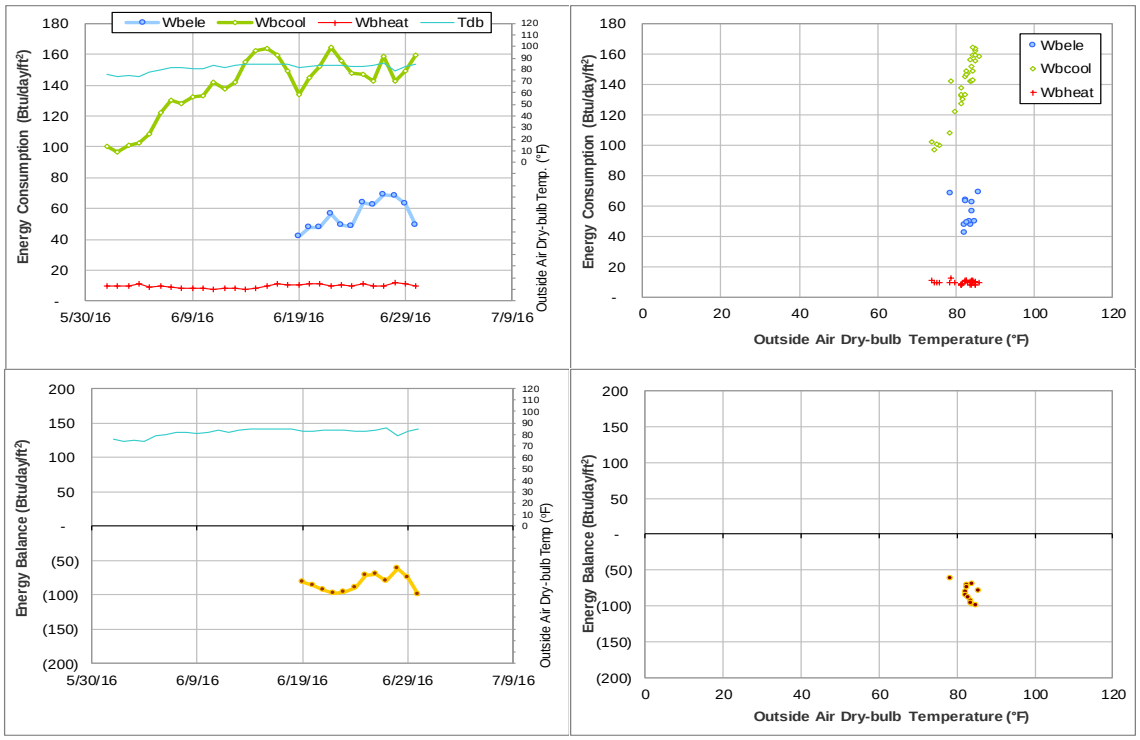


Figure IV-171 White Creek Apartment 1 and White Creek Apts Activity Center TAMU BLDG # 1589 and 1590 Energy Balance Plot during June 2016

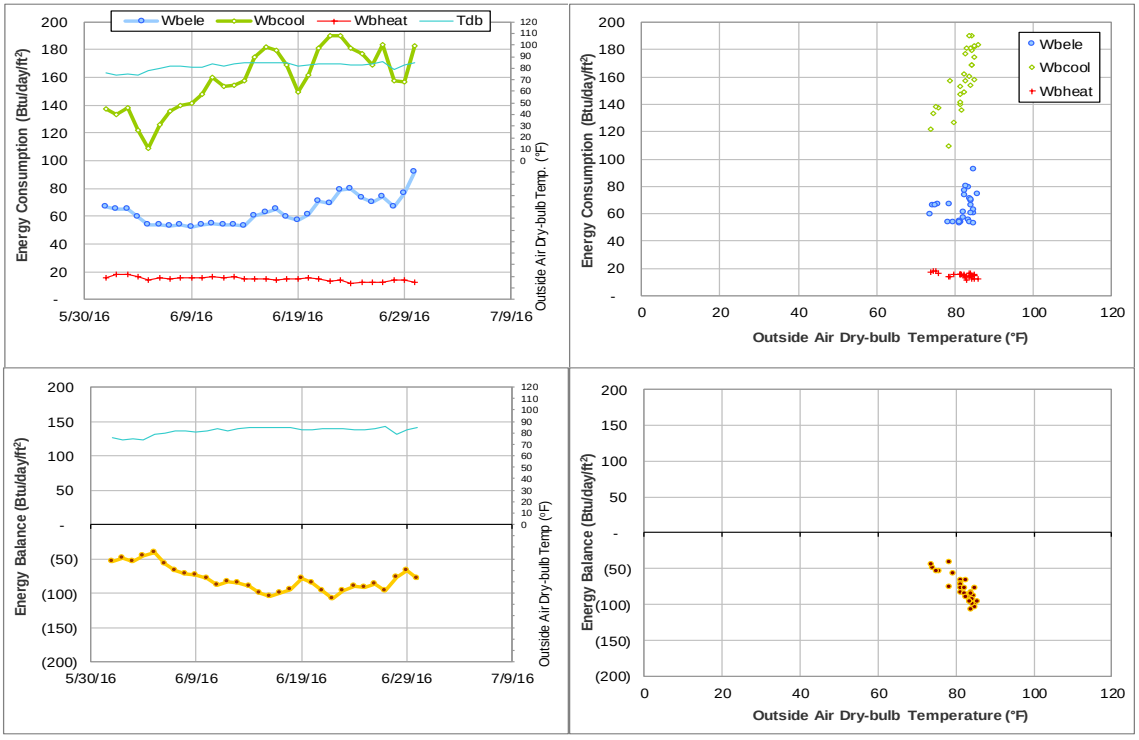


Figure IV-172 White Creek Apartment 2 TAMU BLDG # 1591 Energy Balance Plot during June 2016

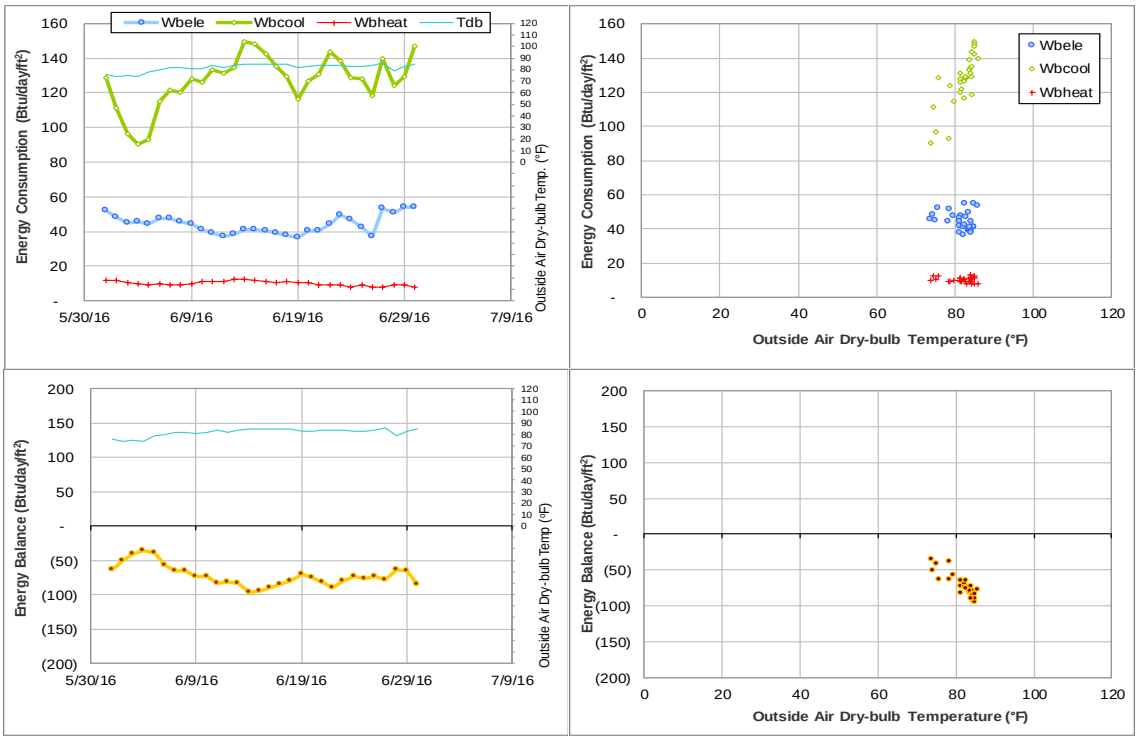


Figure IV-173 White Creek Apartment 3 TAMU BLDG # 1592 Energy Balance Plot during June 2016

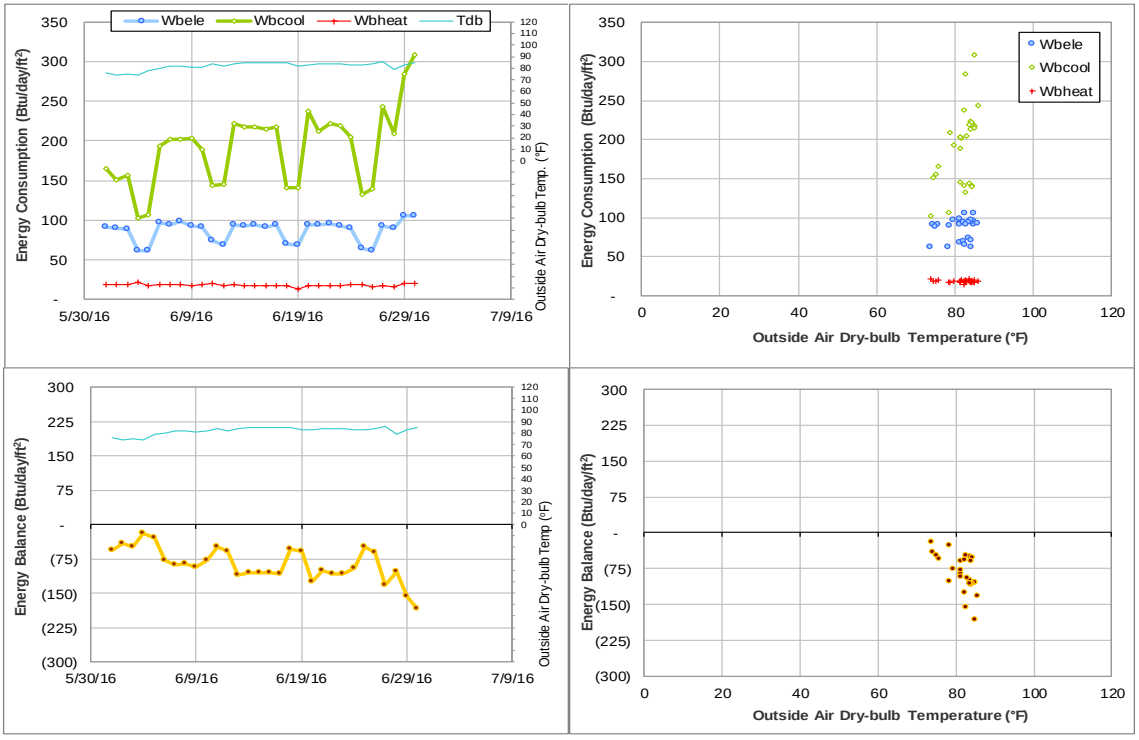


Figure IV-174 Gilchrist TTI Building TAMU BLDG # 1600 Energy Balance Plot during June 2016

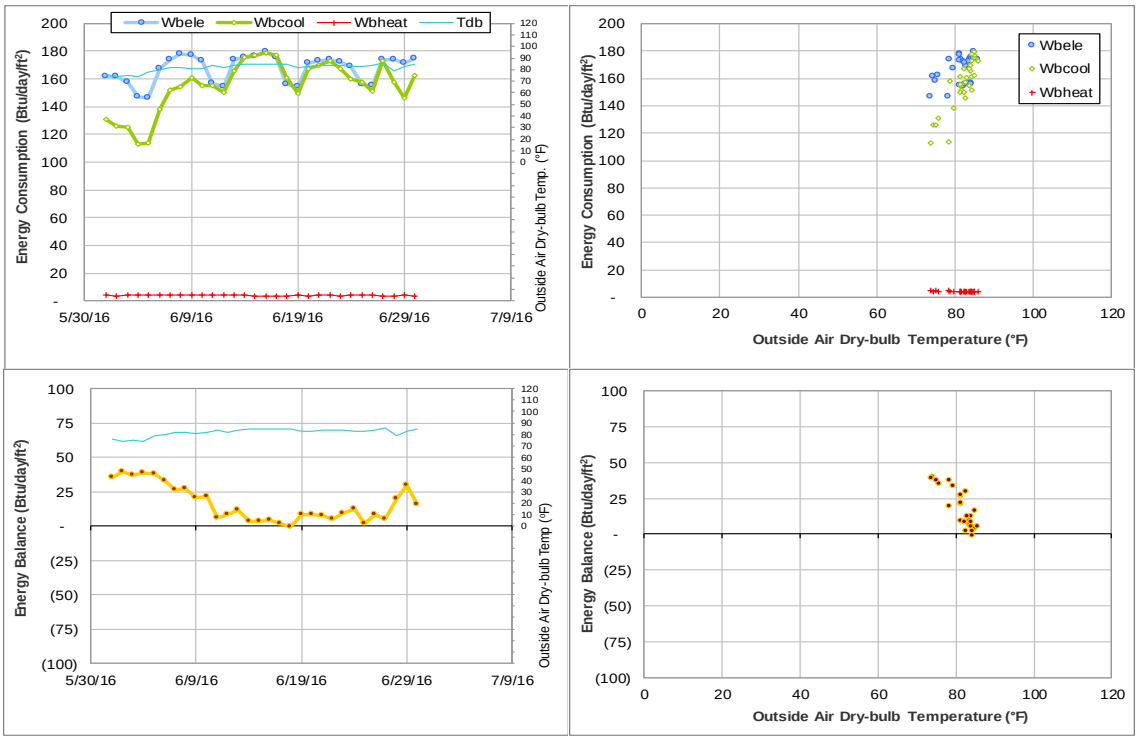


Figure IV-175 International Ocean Discovery Building TAMU BLDG # 1601 Energy Balance Plot during June 2016

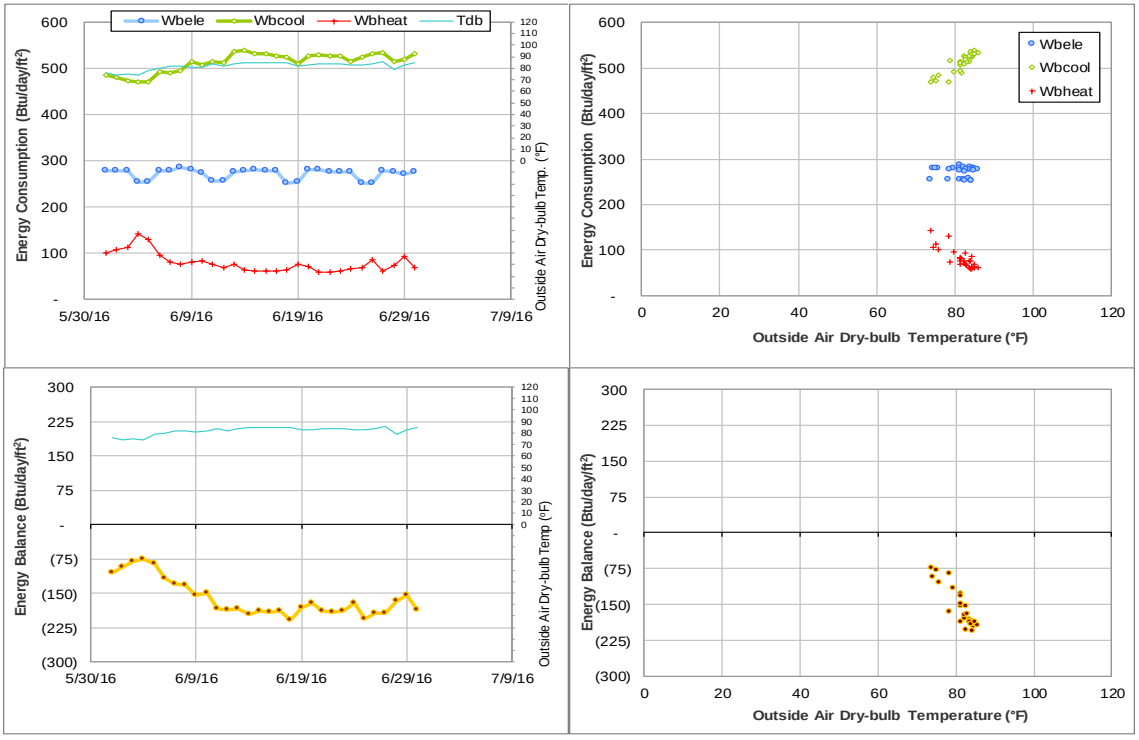


Figure IV-176 Offshore Technology Research Center TAMU BLDG # 1604 Energy Balance Plot during June 2016

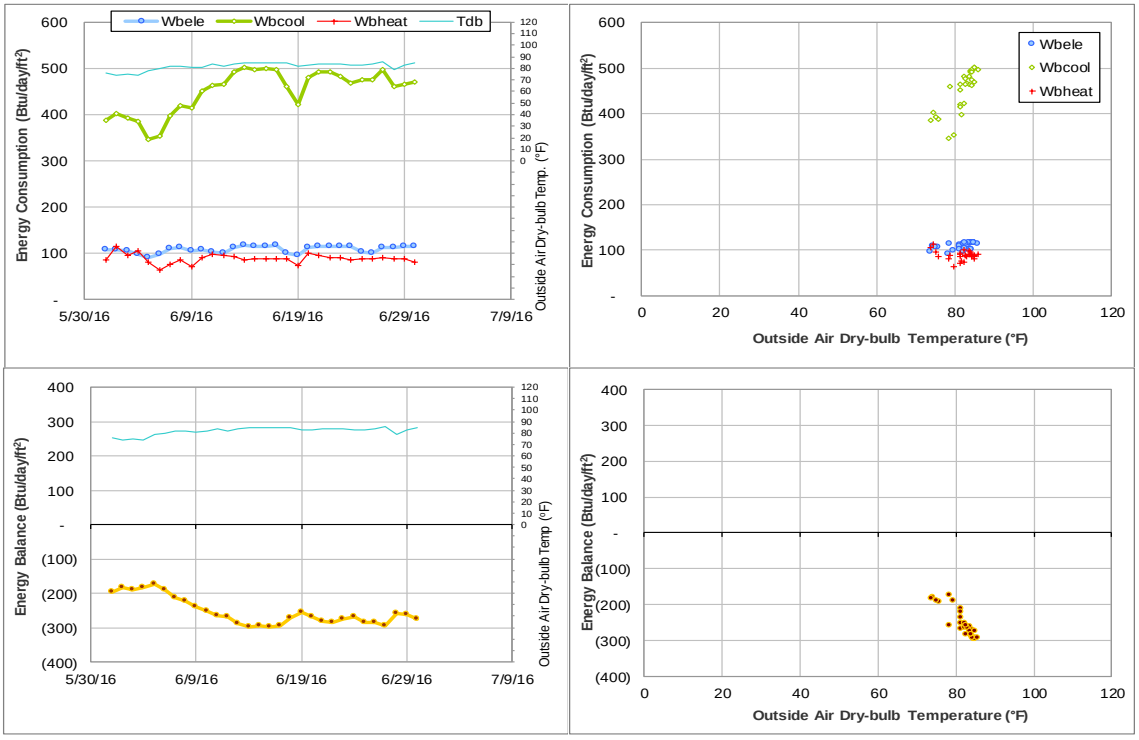


Figure IV-177 George Bush Presidential Library & Museum TAMU BLDG # 1606 Energy Balance Plot during June 2016

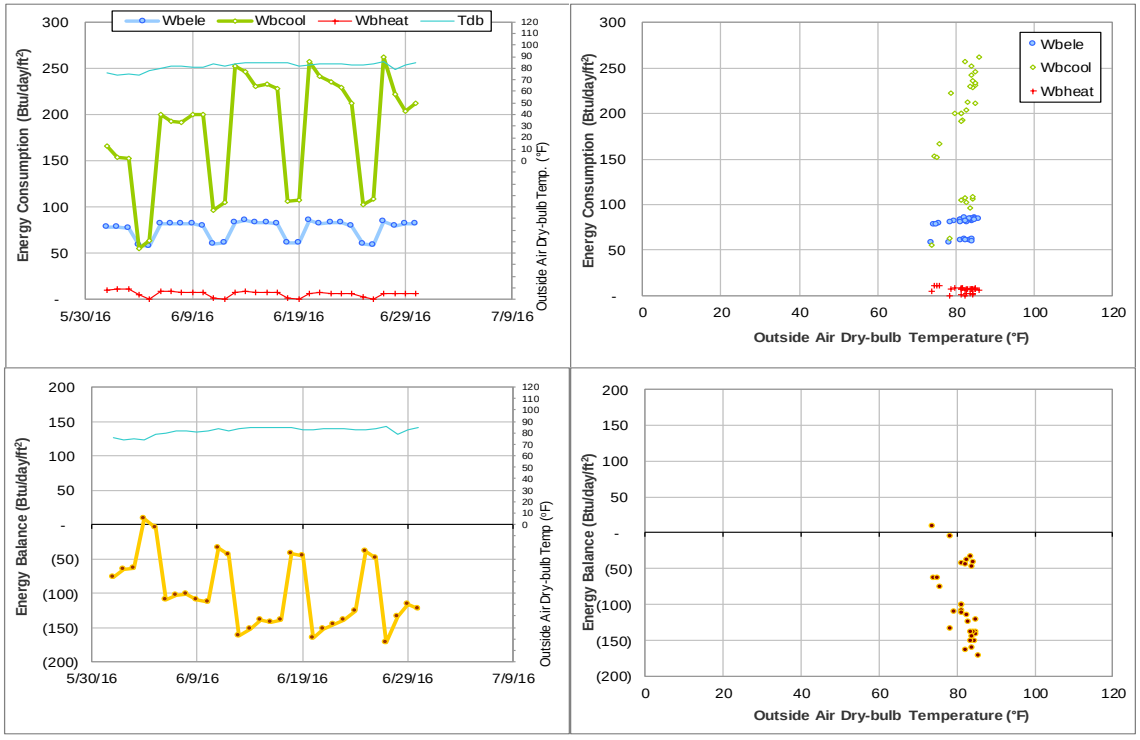


Figure IV-178 Allen Building TAMU BLDG # 1607 Energy Balance Plot during June 2016

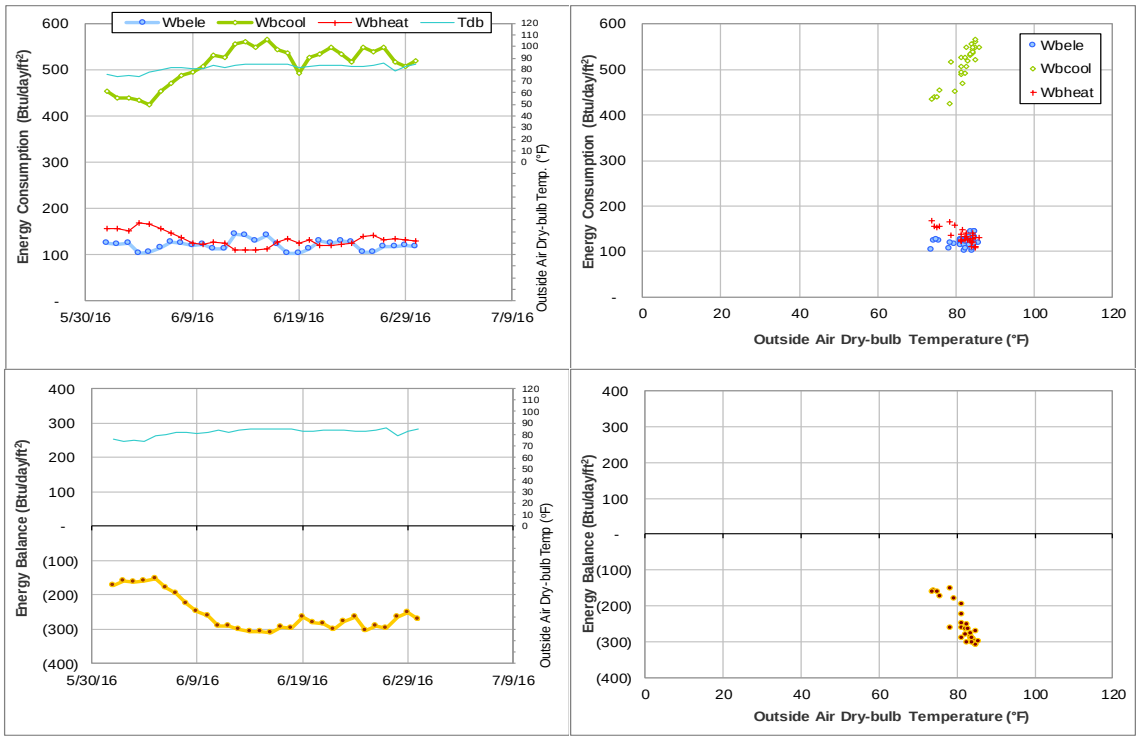


Figure IV-179 Annenberg Presidential Conference Center TAMU BLDG # 1608 Energy Balance Plot during June 2016

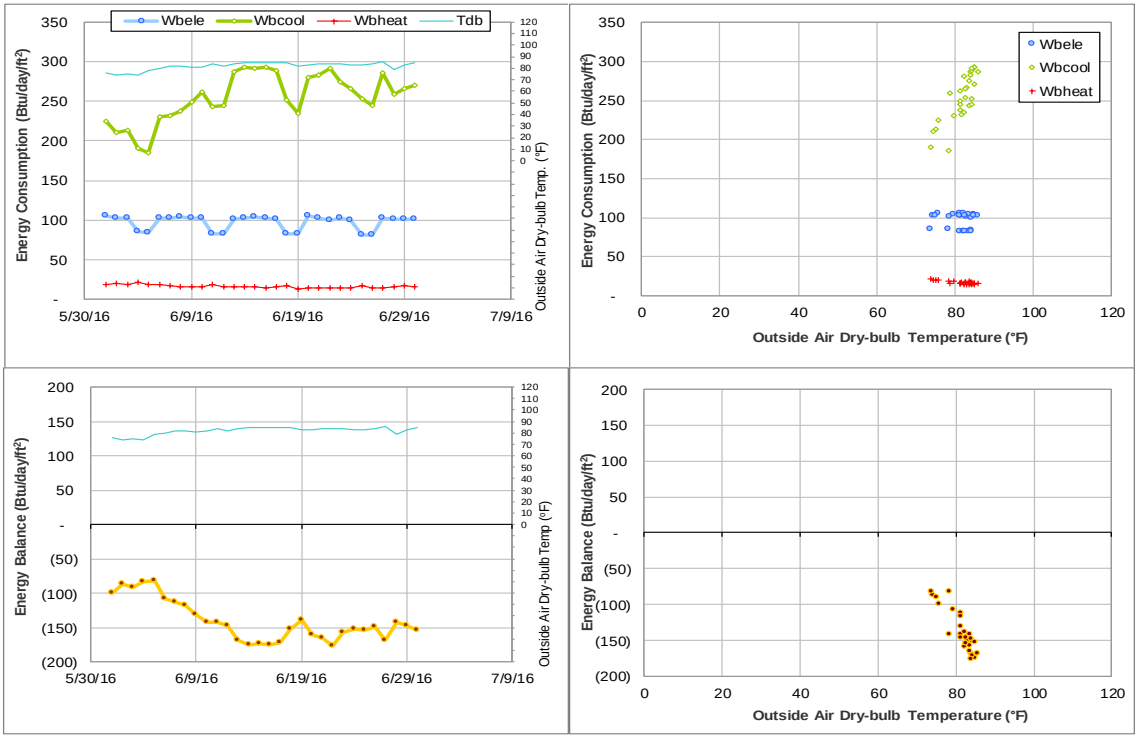


Figure IV-180 TTI Headquarters TAMU BLDG # 1609 Energy Balance Plot during June 2016

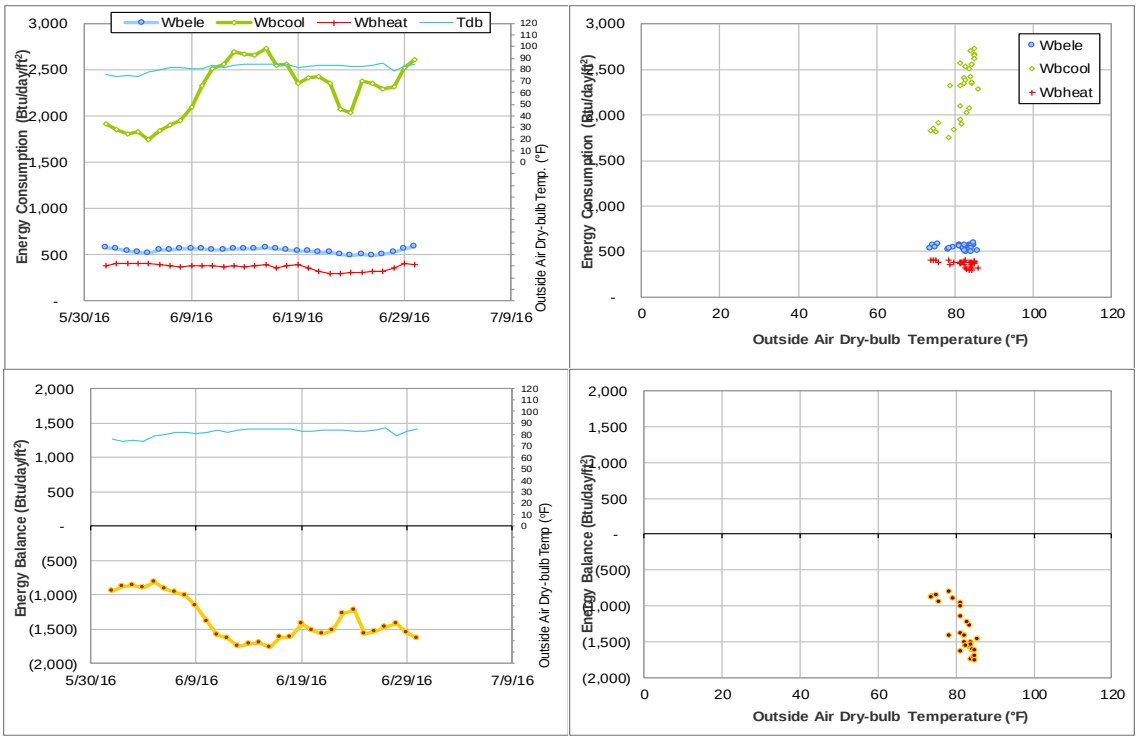


Figure IV-181 Engineering Research Building TAMU BLDG # 1611 Energy Balance Plot during June 2016

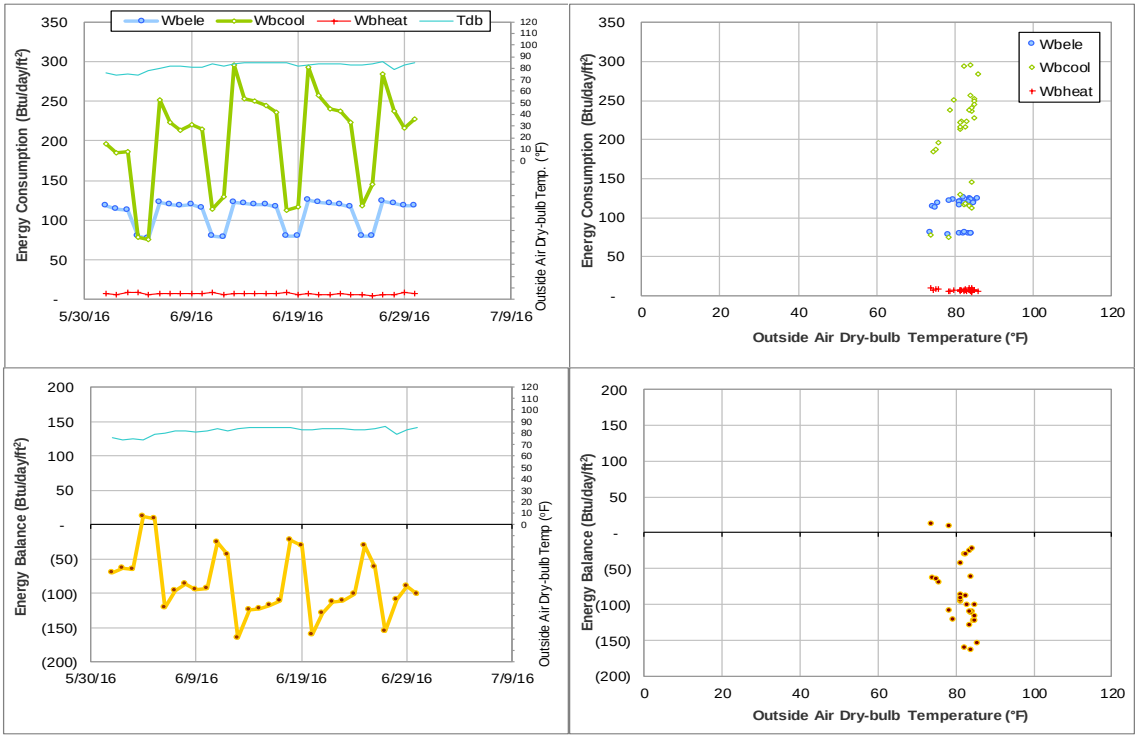


Figure IV-182 General Services Complex TAMU BLDG # 1800 Energy Balance Plot during June 2016

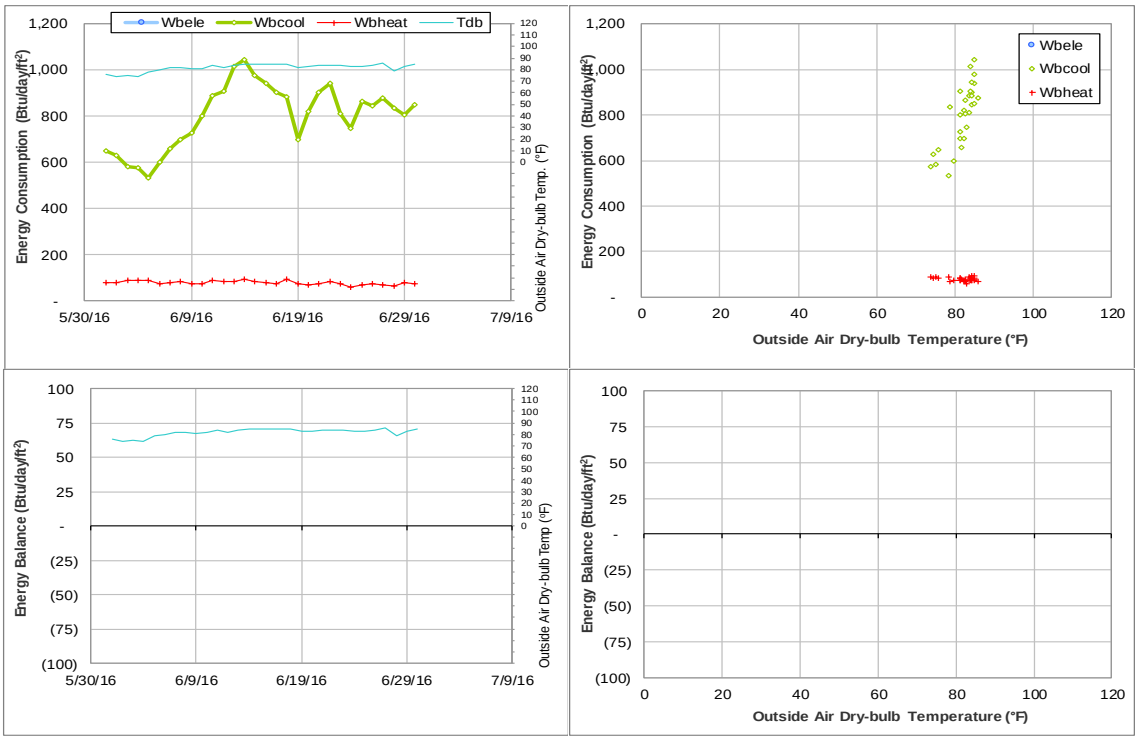


Figure IV-183 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during June 2016

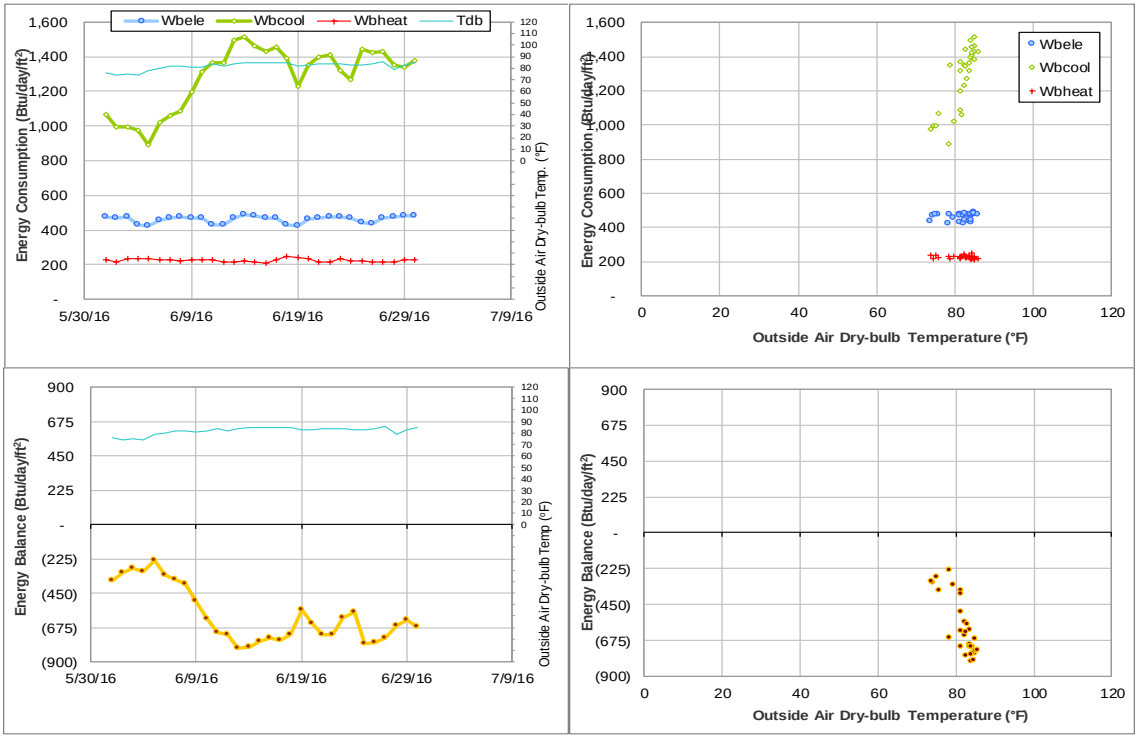


Figure IV-184 Vet Med Research Bldg Addition TAMU BLDG # 1811 Energy Balance Plot during June 2016

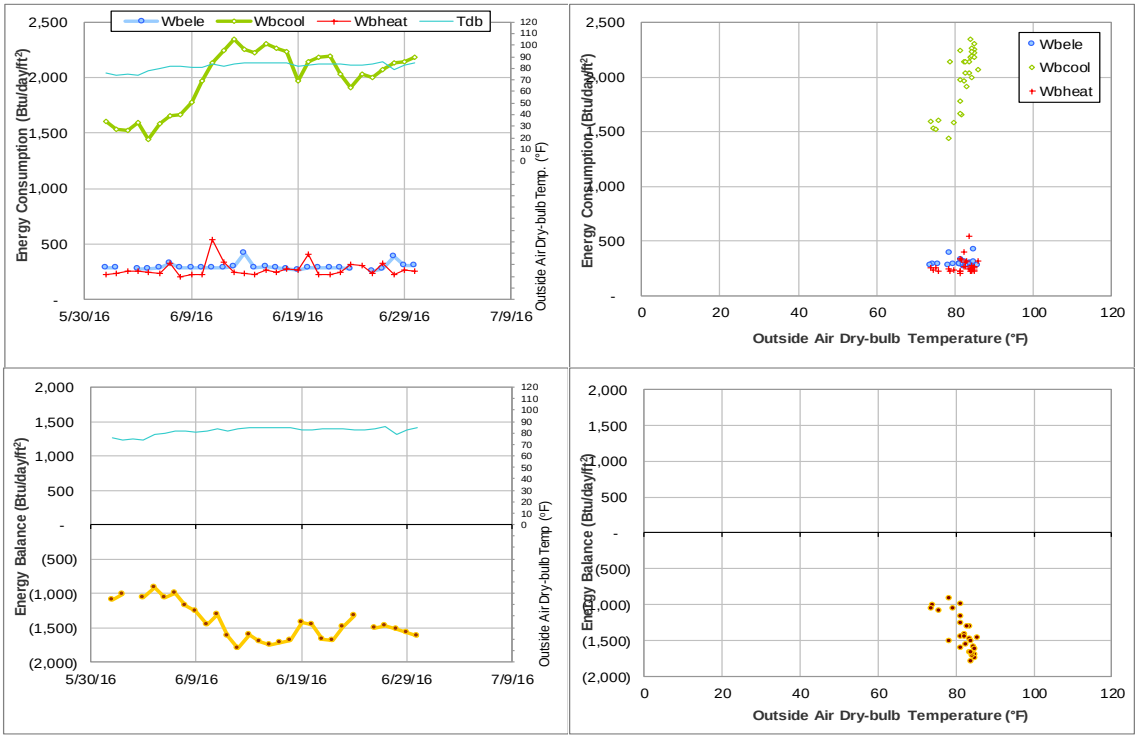


Figure IV-185 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during June 2016

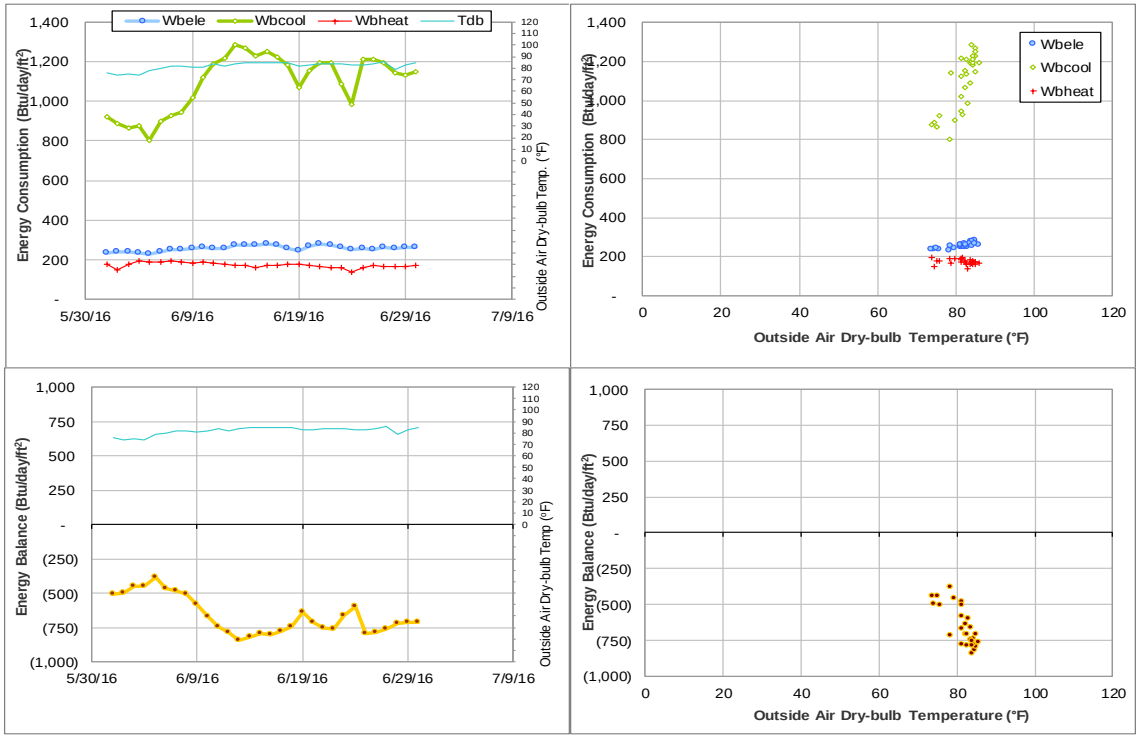


Figure IV-186 Texas A&M Institute for Preclinical Studies A TAMU BLDG # 1904 Energy Balance Plot during June 2016

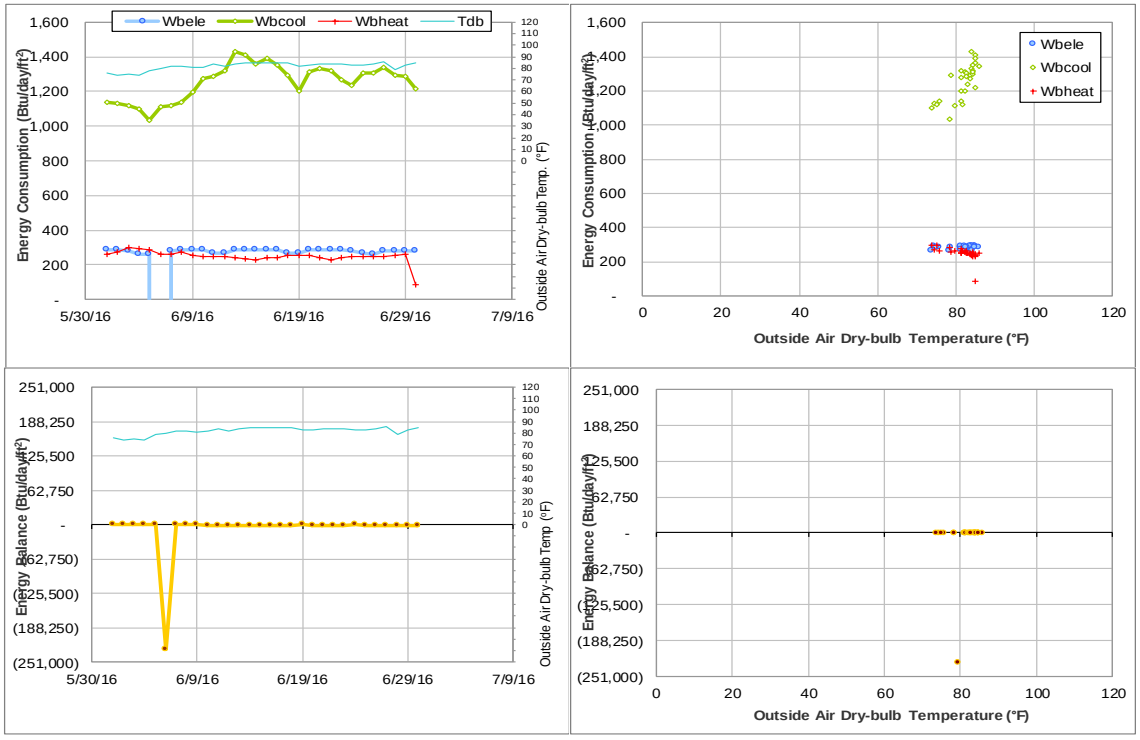


Figure IV-187 National Center for Therapeutics Manufacturing TAMU BLDG # 1910 Energy Balance Plot during June 2016

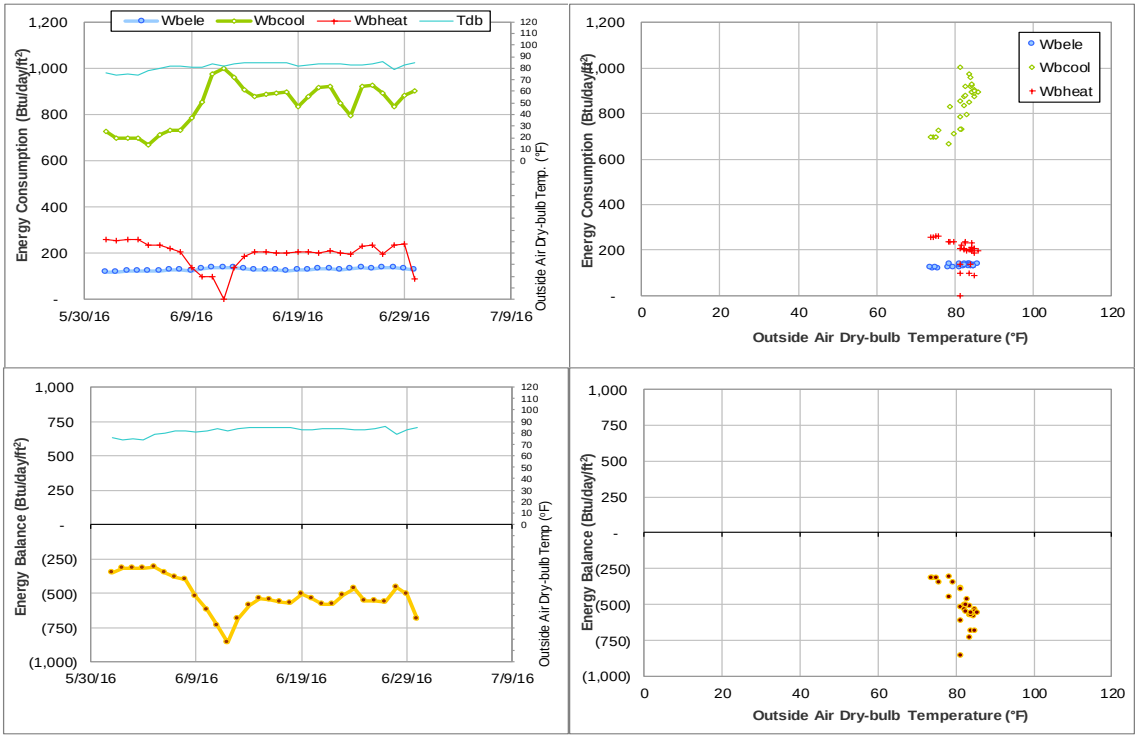


Figure IV-188 Multi-Species Research Building TAMU BLDG # 1911 Energy Balance Plot during June 2016

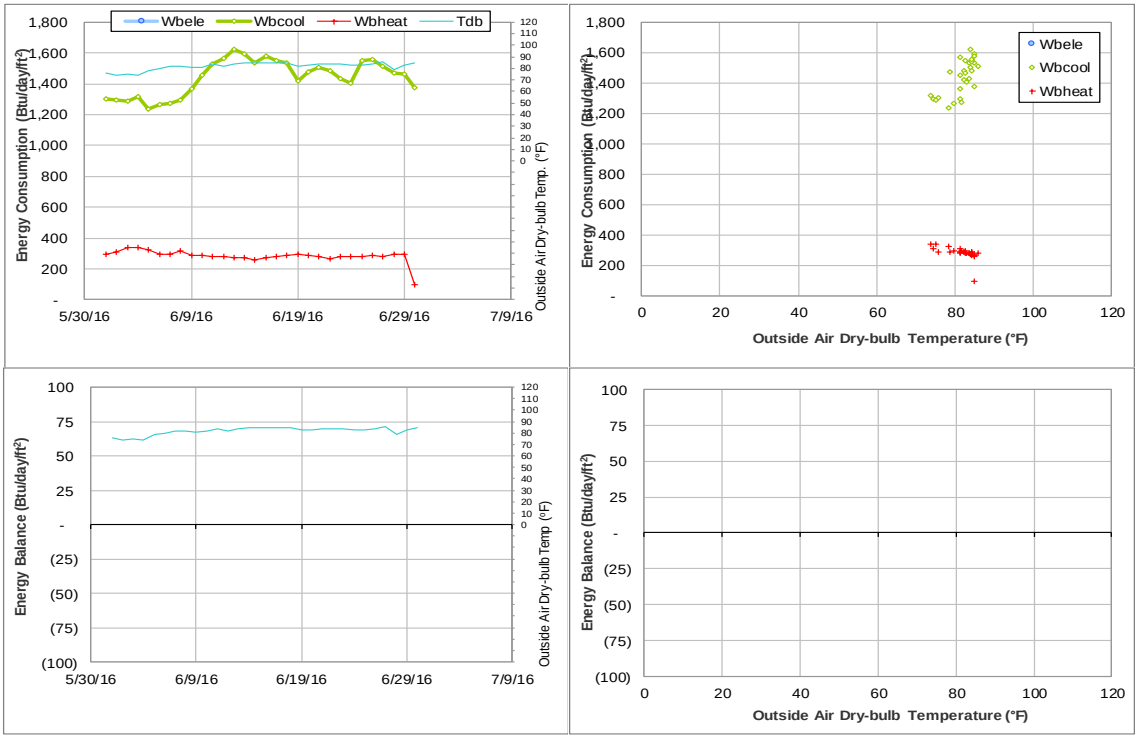


Figure IV-189 NCTM Manufacturing Building TAMU BLDG # 10226 Energy Balance Plot during June 2016

V. Energy Balance Plots with filled-in data for June 2016 Consumption

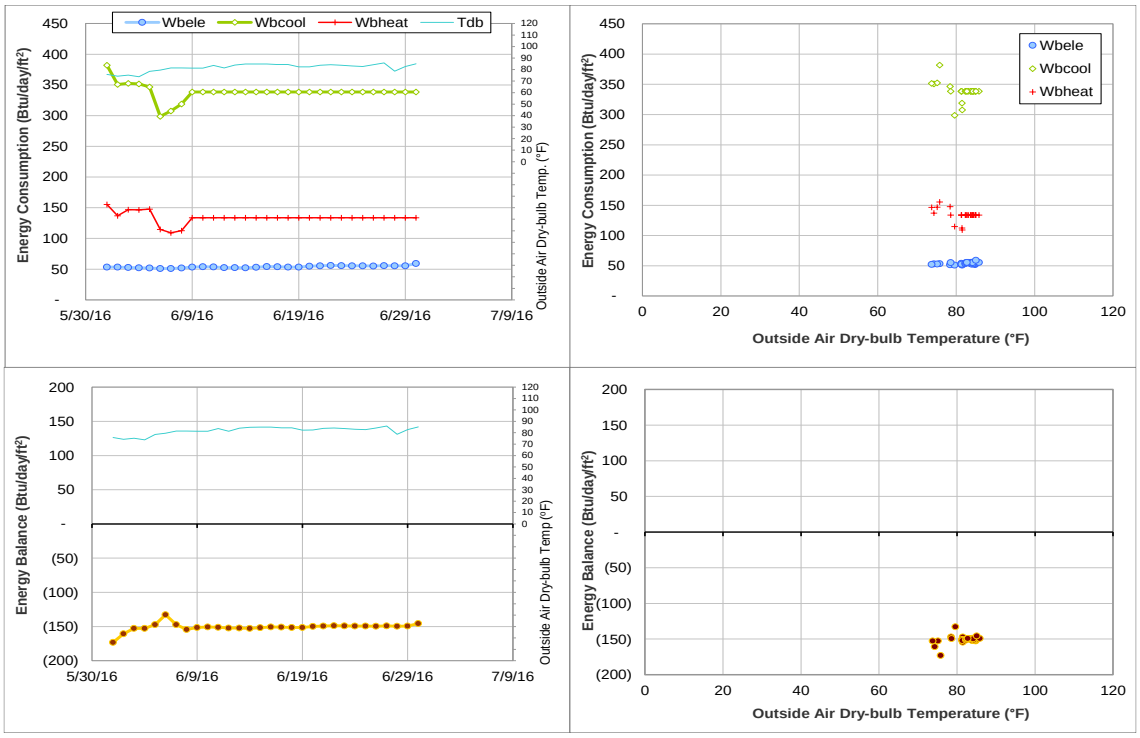


Figure V-1 Appelt Residence Hall TAMU BLDG # 293 Energy Balance Plot during June 2016

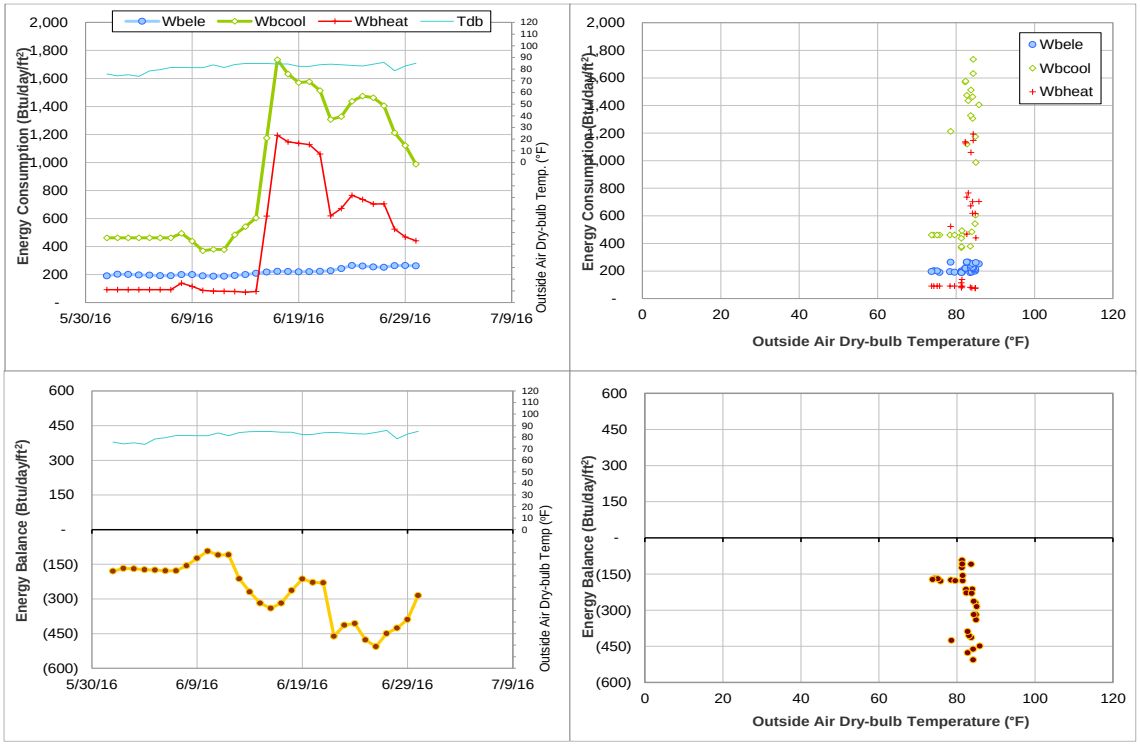


Figure V-2 Spence Hall Dorm 1 TAMU BLDG # 400 Energy Balance Plot during June 2016

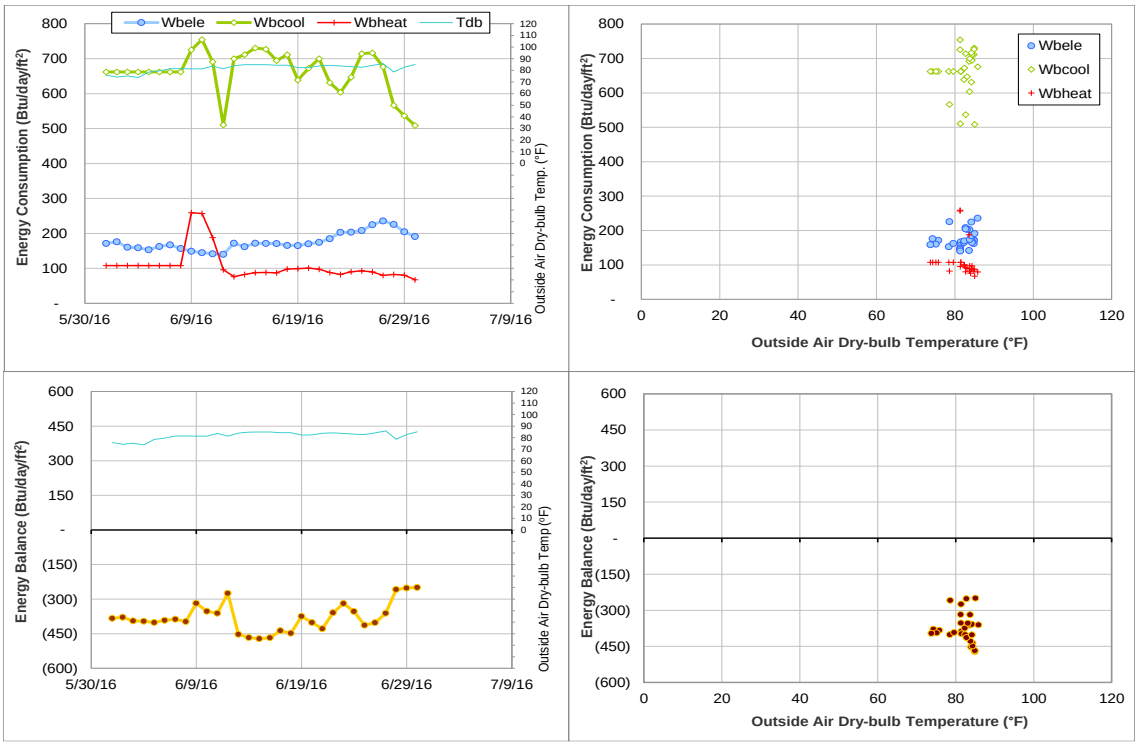


Figure V-3 Kiest Hall Dorm 2 TAMU BLDG # 401 Energy Balance Plot during June 2016

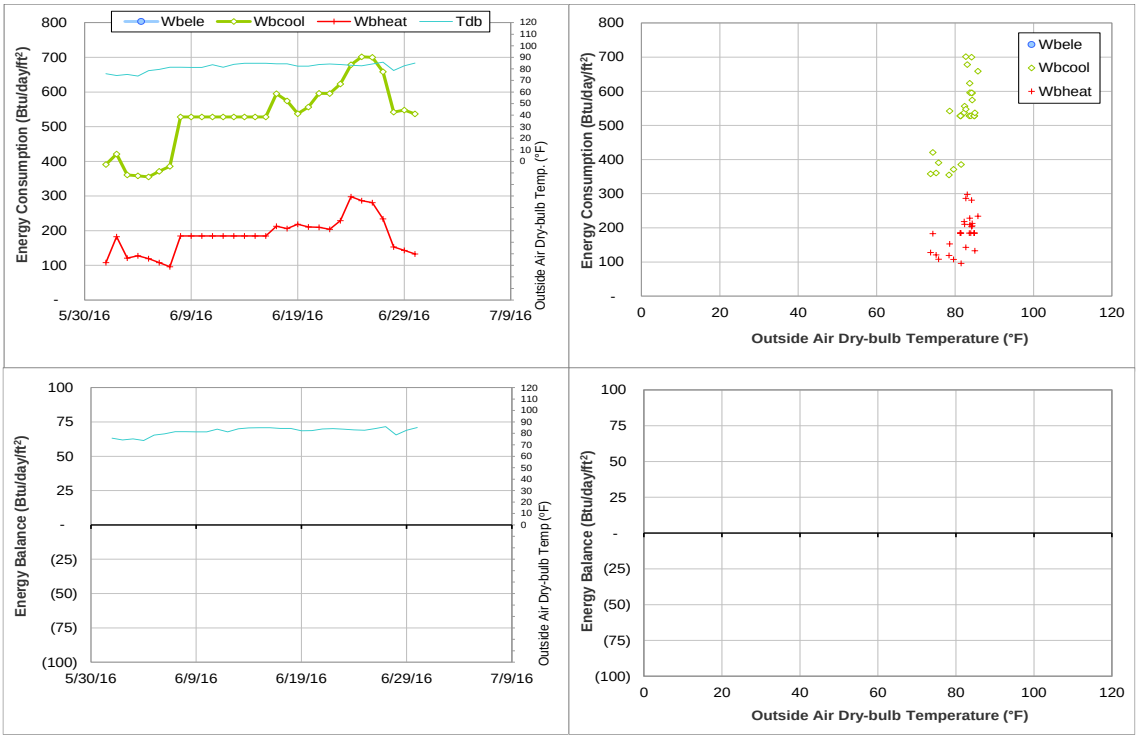


Figure V-4 Briggs Hall Dorm 3 TAMU BLDG # 402 Energy Balance Plot during June 2016

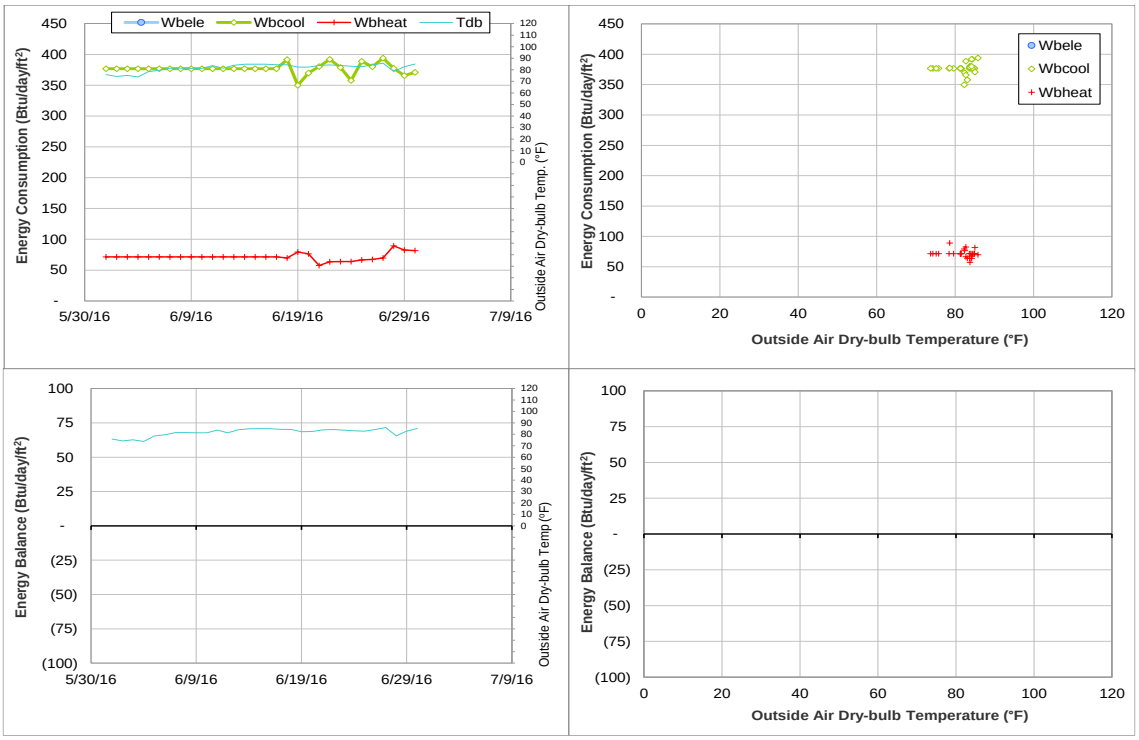


Figure V-5 Gainer Hall Dorm 5 TAMU BLDG # 404 Energy Balance Plot during June 2016

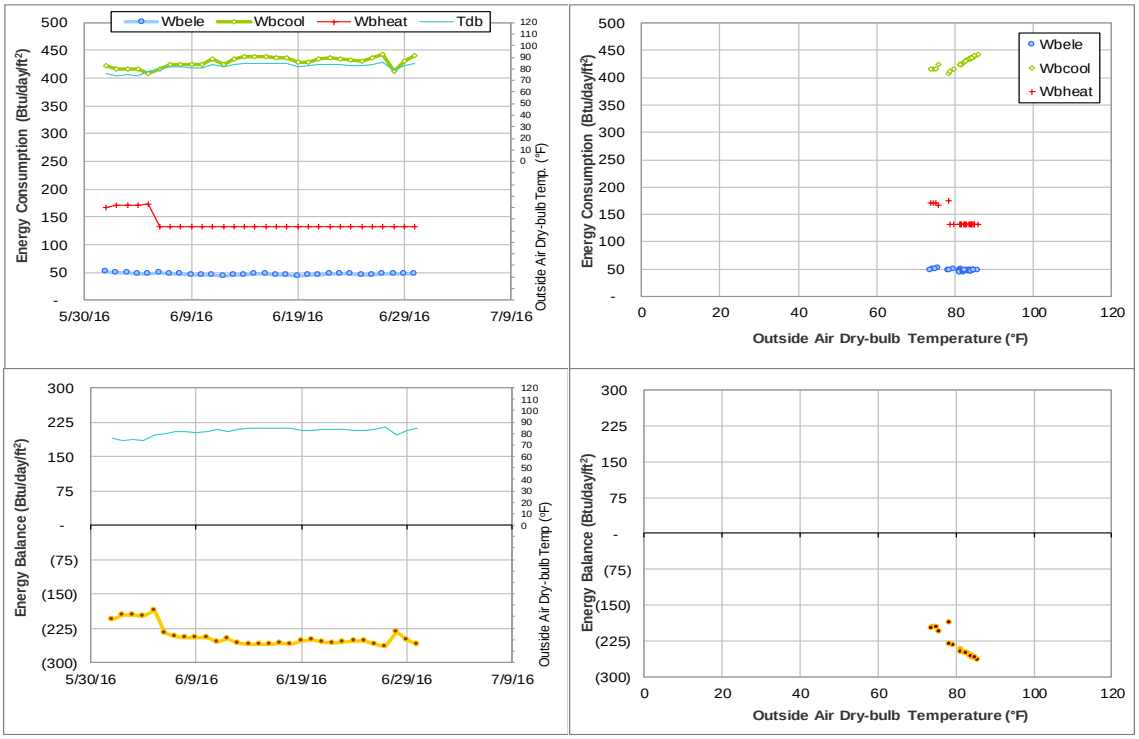


Figure V-6 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during June 2016

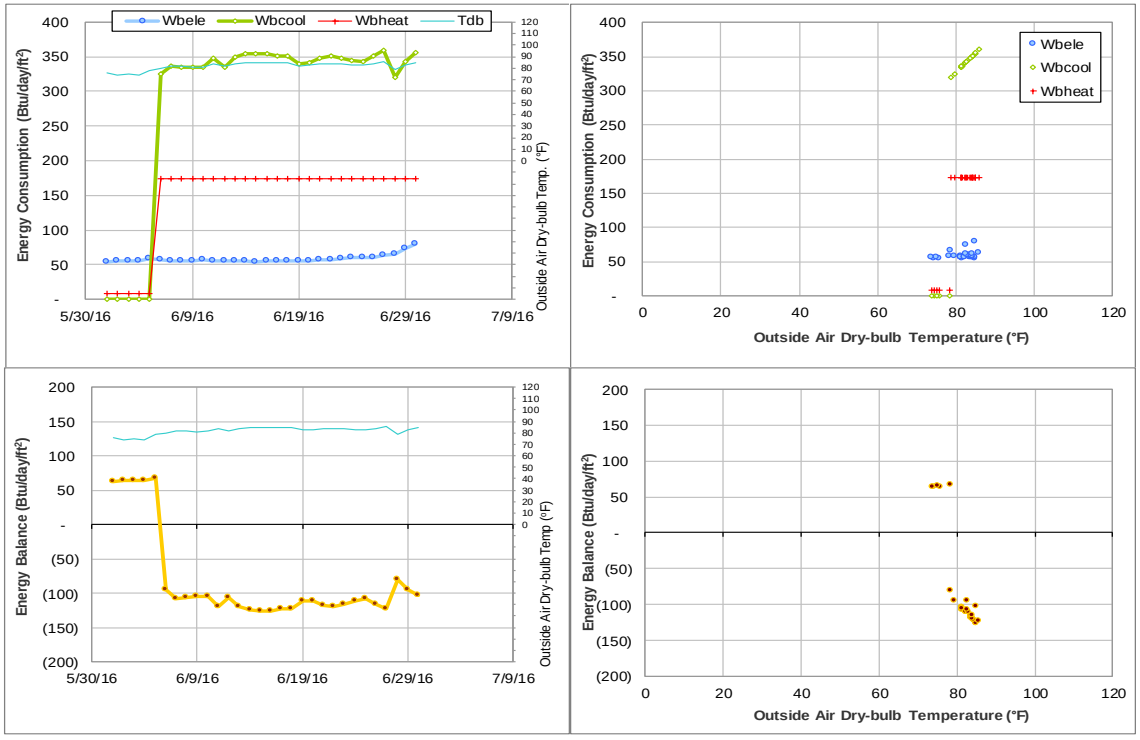


Figure V-7 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during June 2016

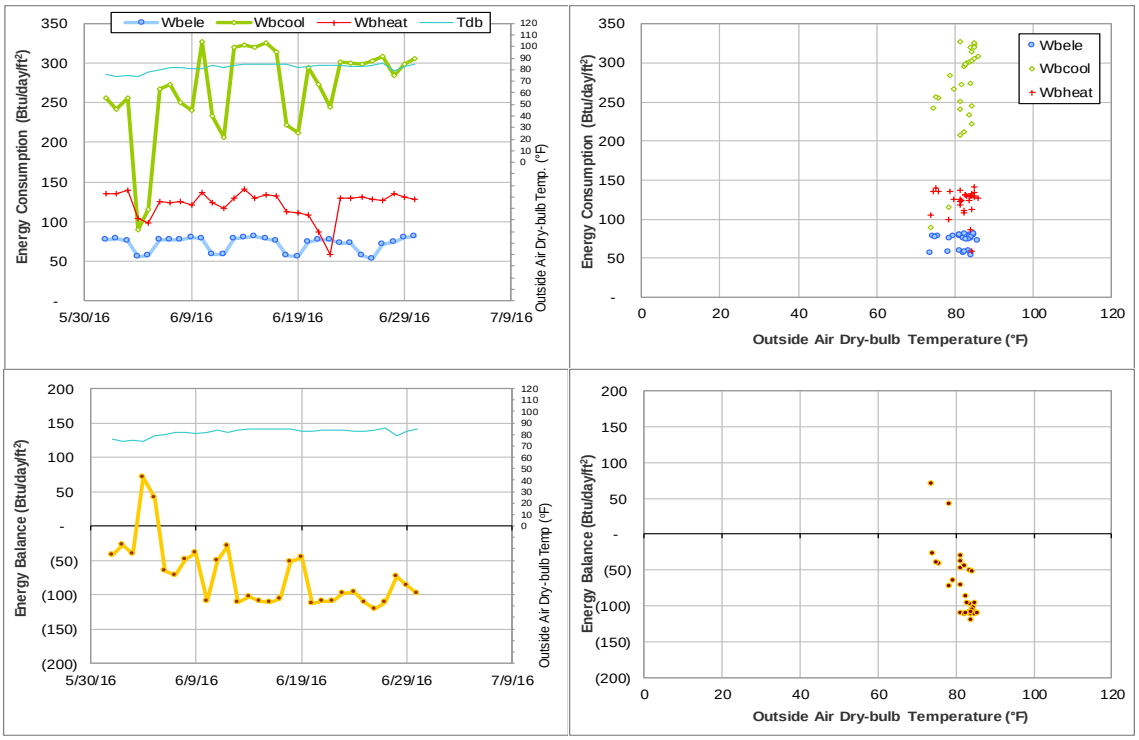


Figure V-8 Academic Building TAMU BLDG # 462 Energy Balance Plot during June 2016

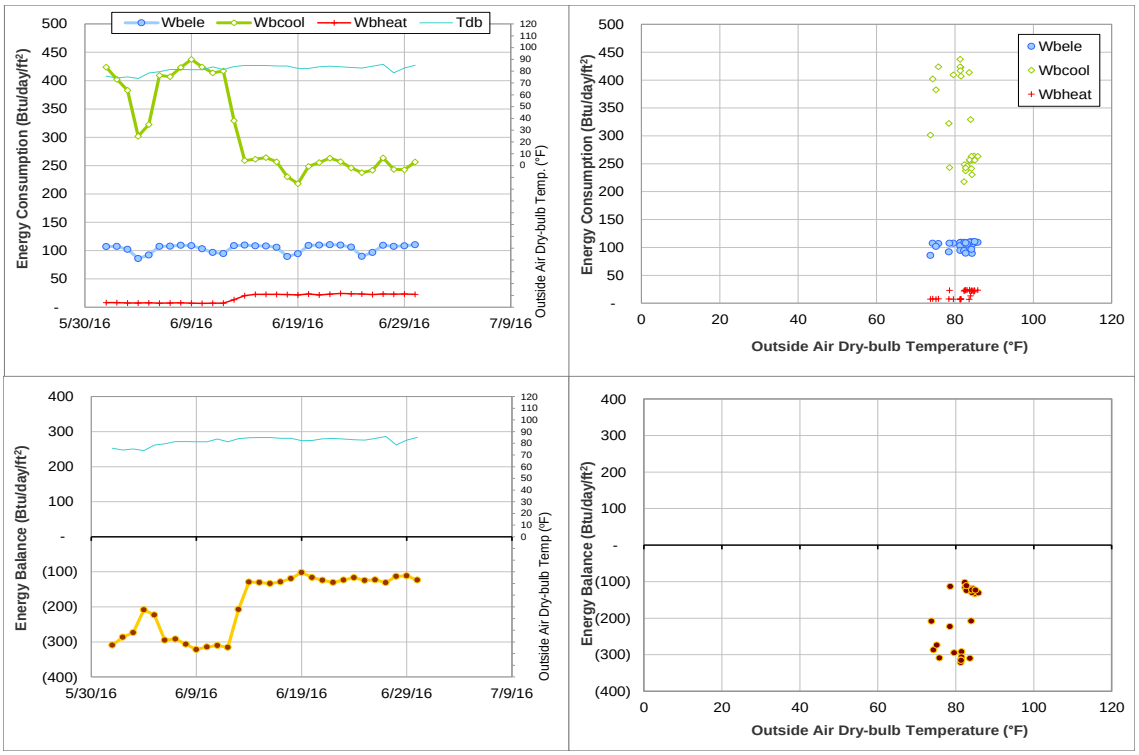


Figure V-9 Evans Library TAMU BLDG # 468 Energy Balance Plot during June 2016

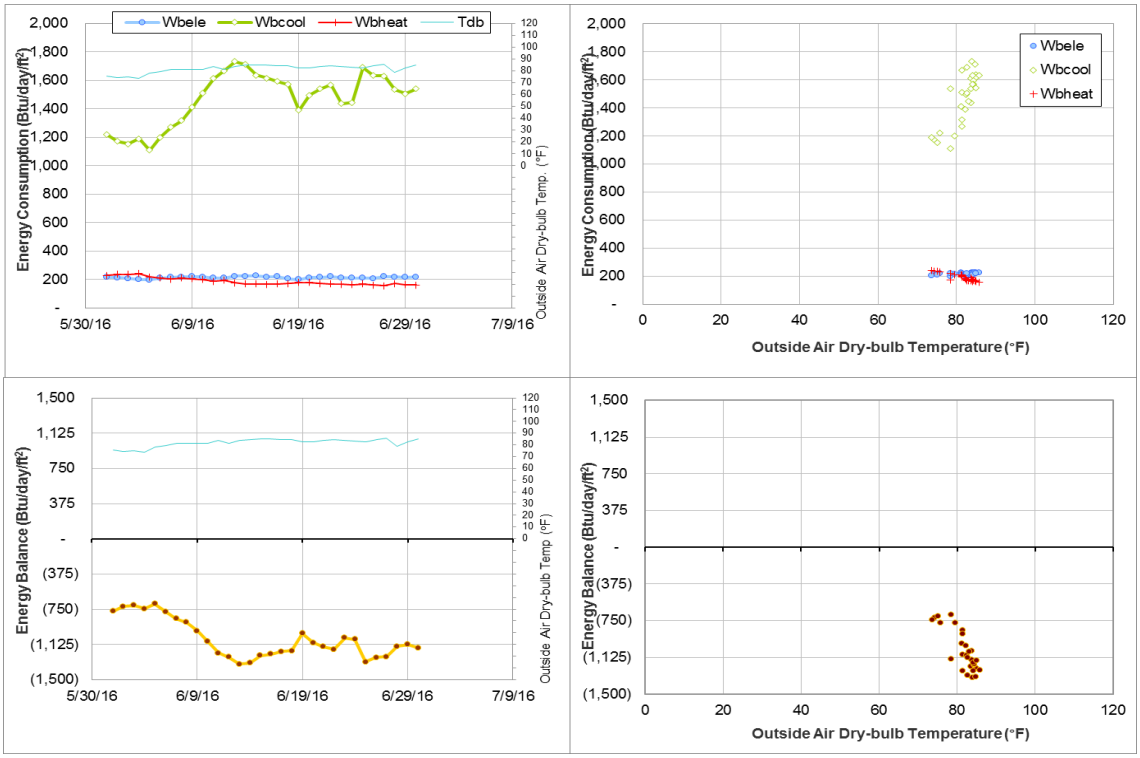


Figure V-10 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during June 2016

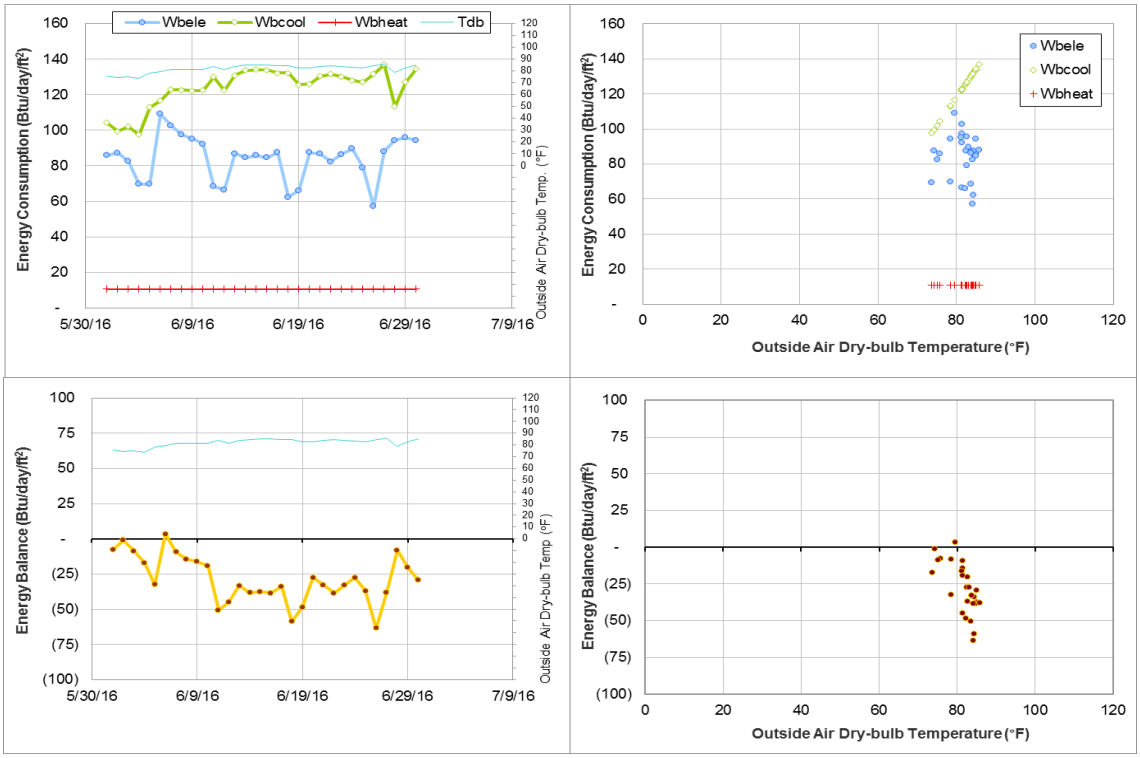


Figure V-11 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during June 2016

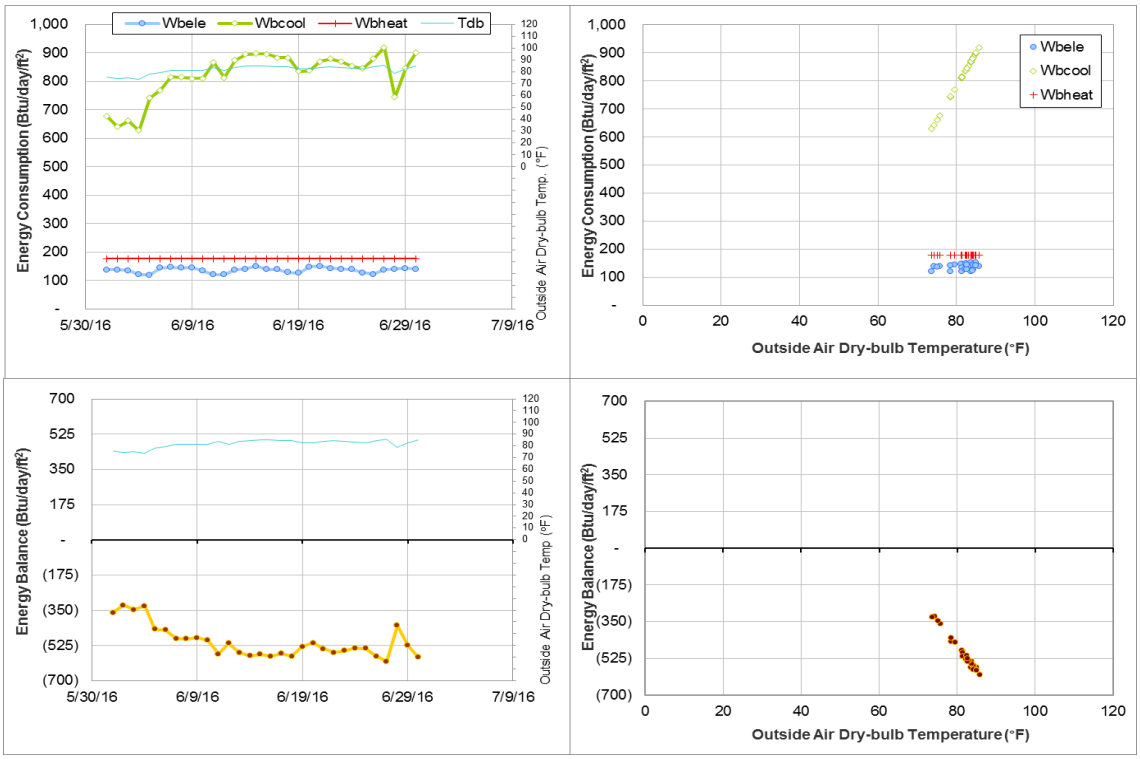


Figure V-12 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during June 2016

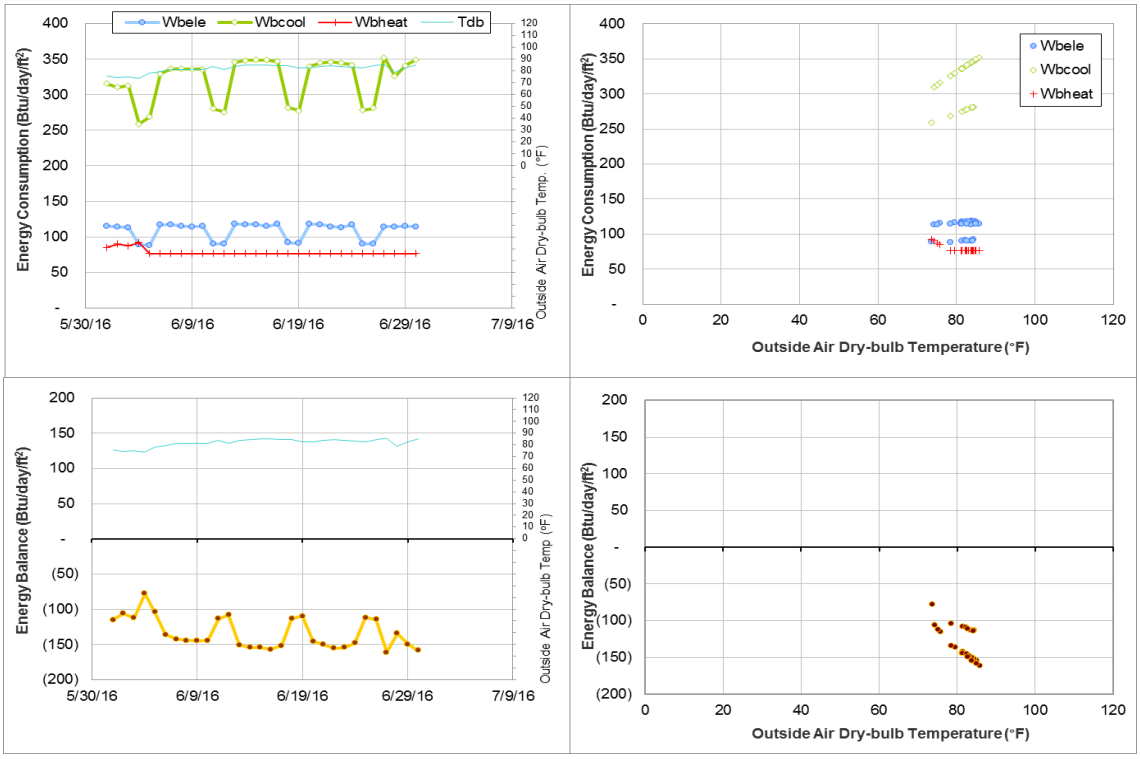


Figure V-13 Beutel Health Center TAMU BLDG # 520 Energy Balance Plot during June 2016

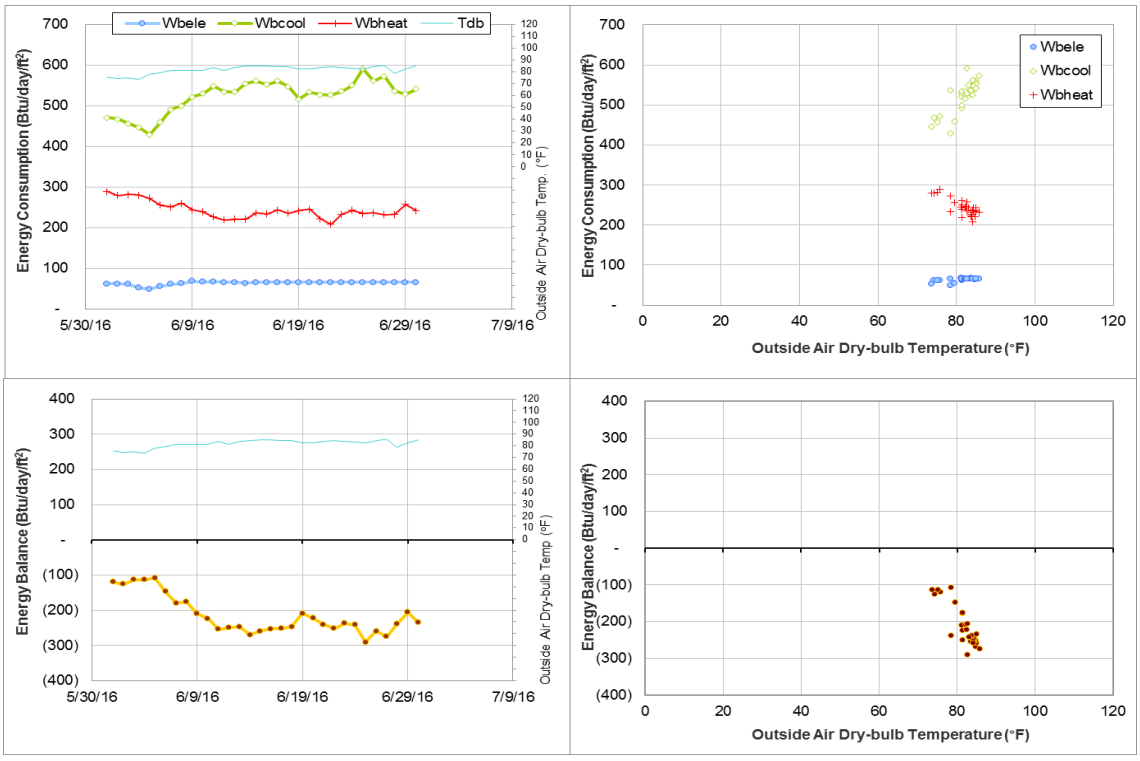


Figure V-14 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during June 2016

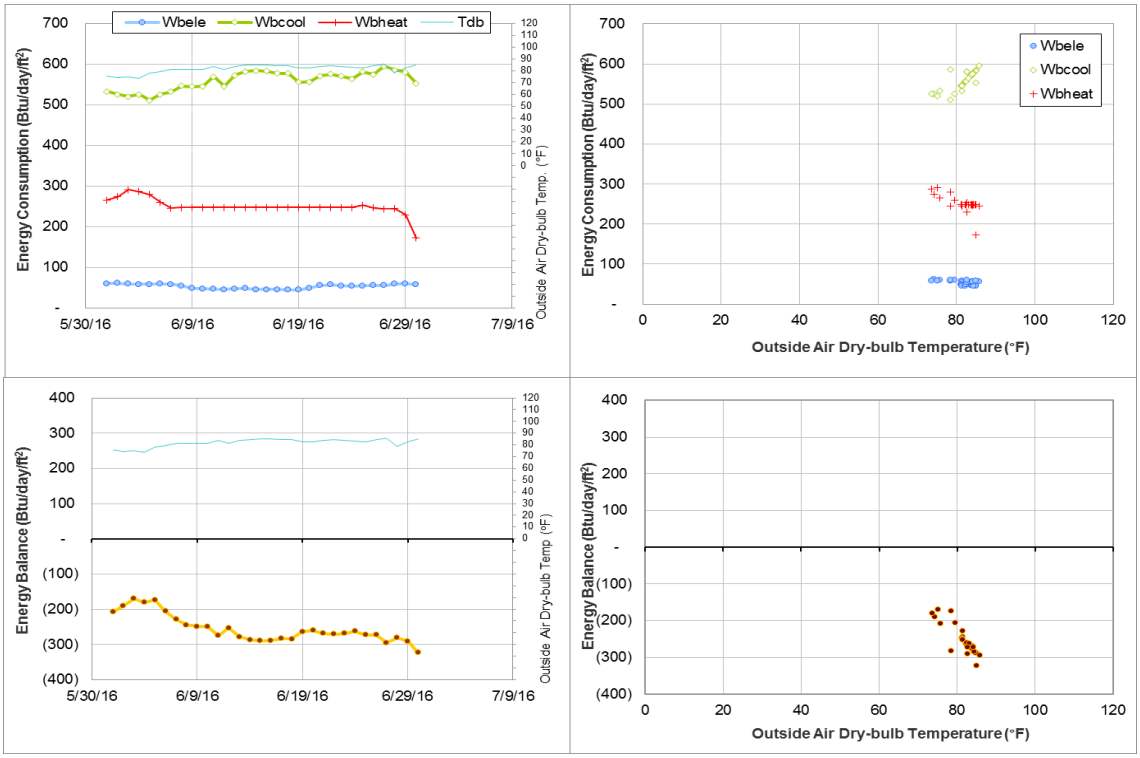


Figure V-15 McFadden Residence Hall TAMU BLDG # 650 Energy Balance Plot during June 2016

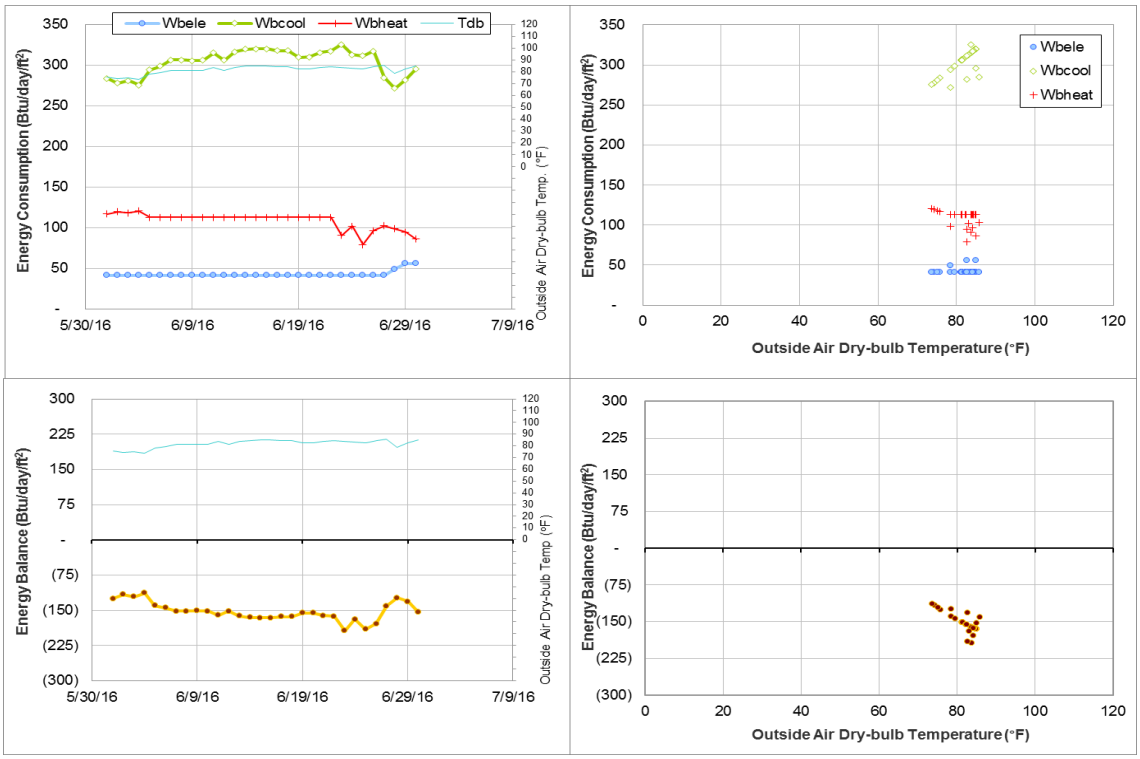


Figure V-16 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during June 2016

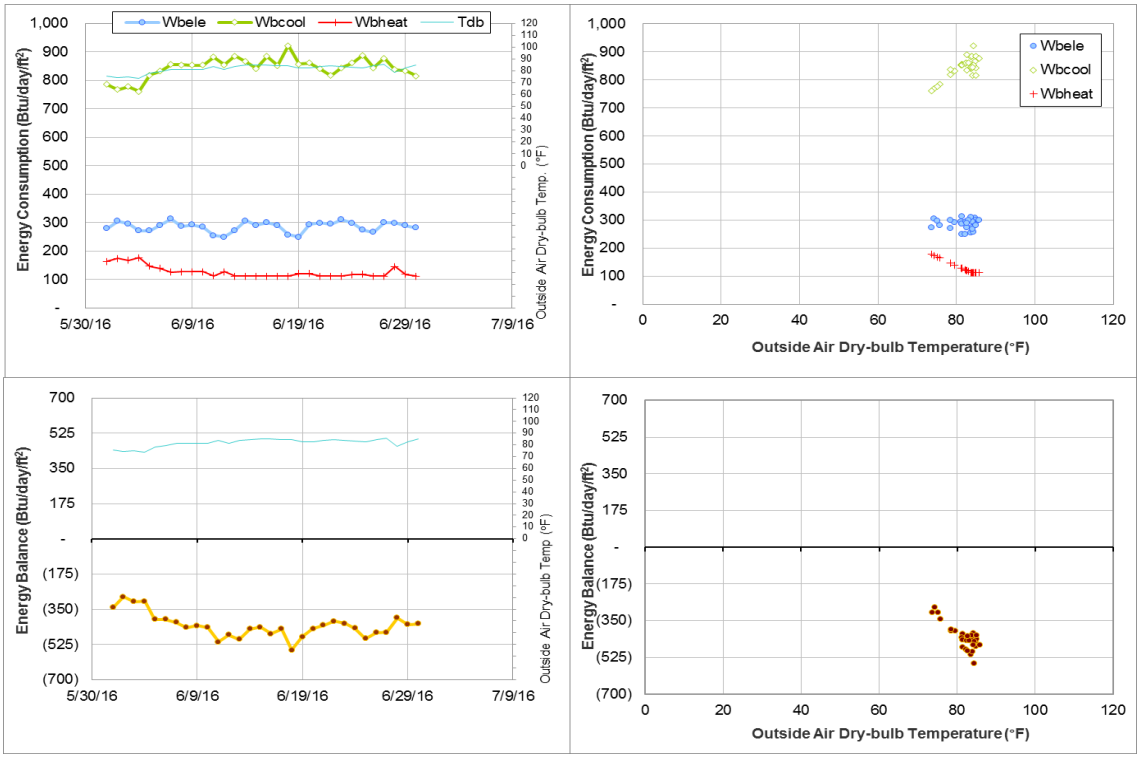


Figure V-17 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during June 2016

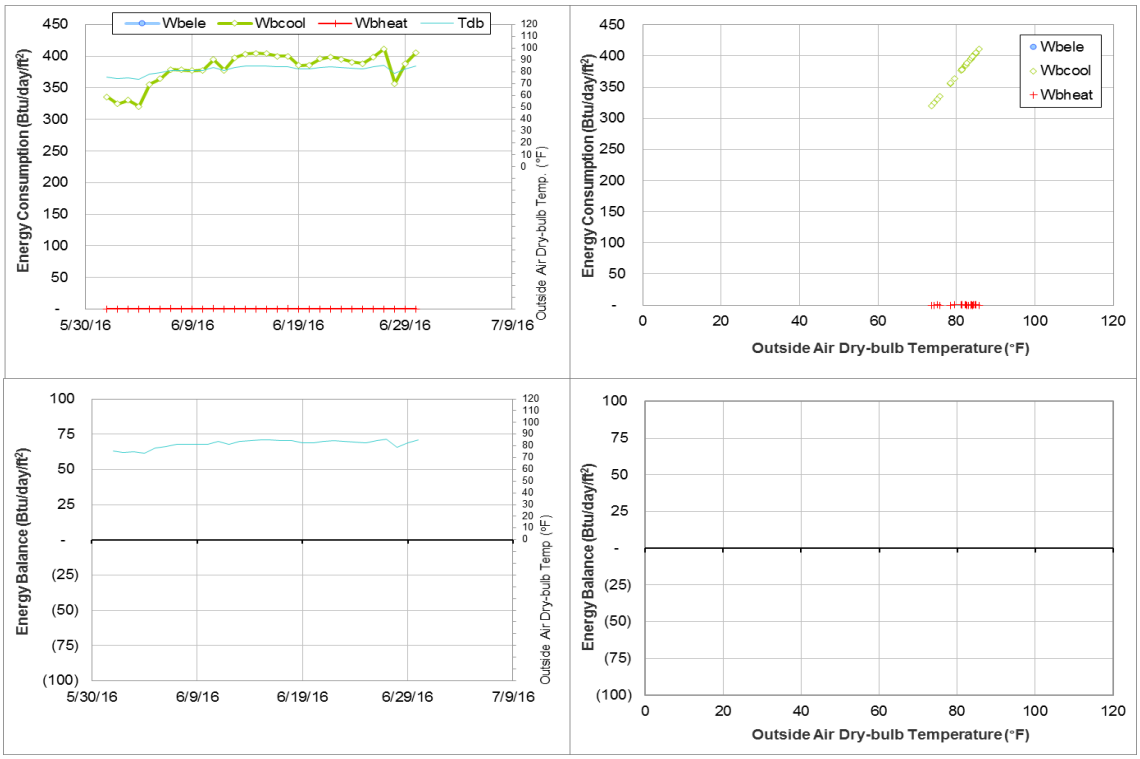


Figure V-18 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during June 2016

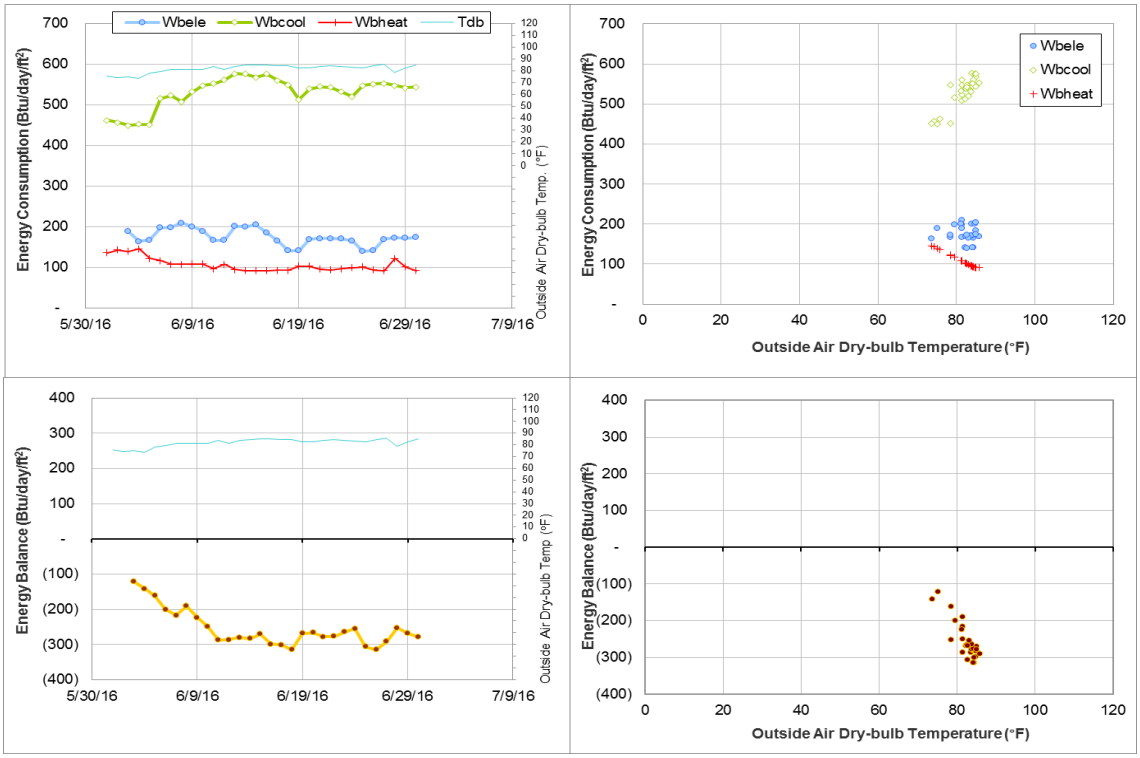


Figure V-19 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during June 2016

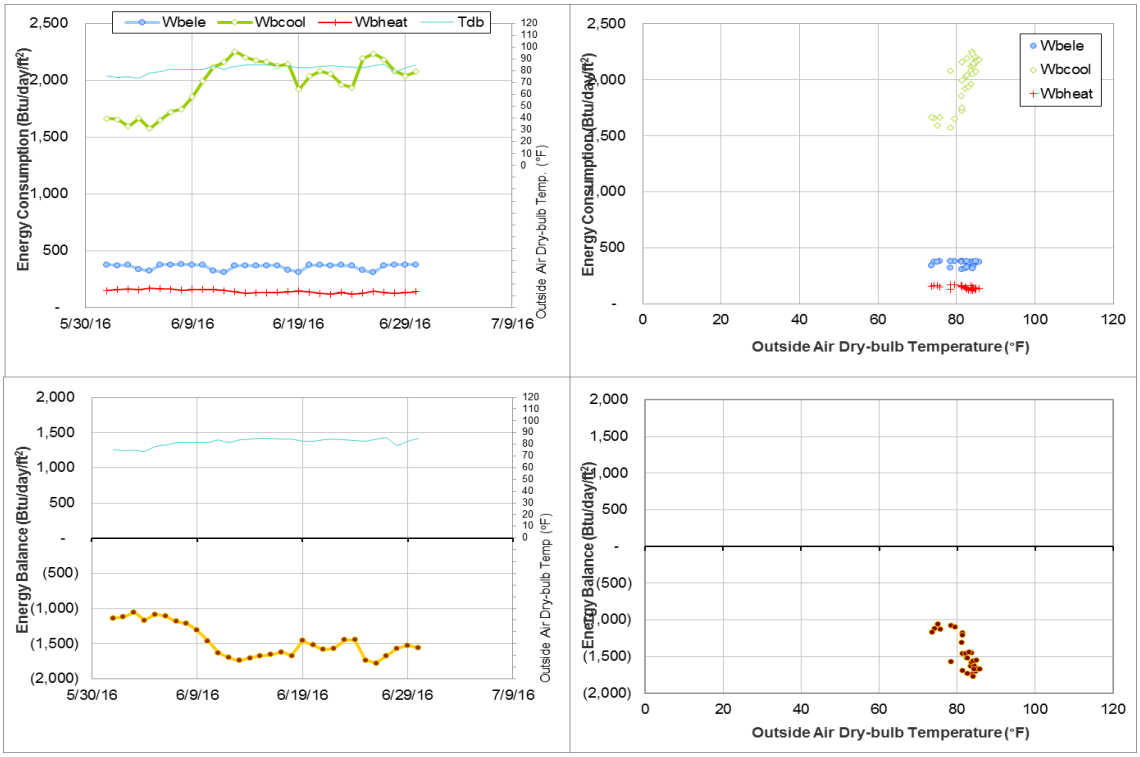


Figure V-20 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during June 2016

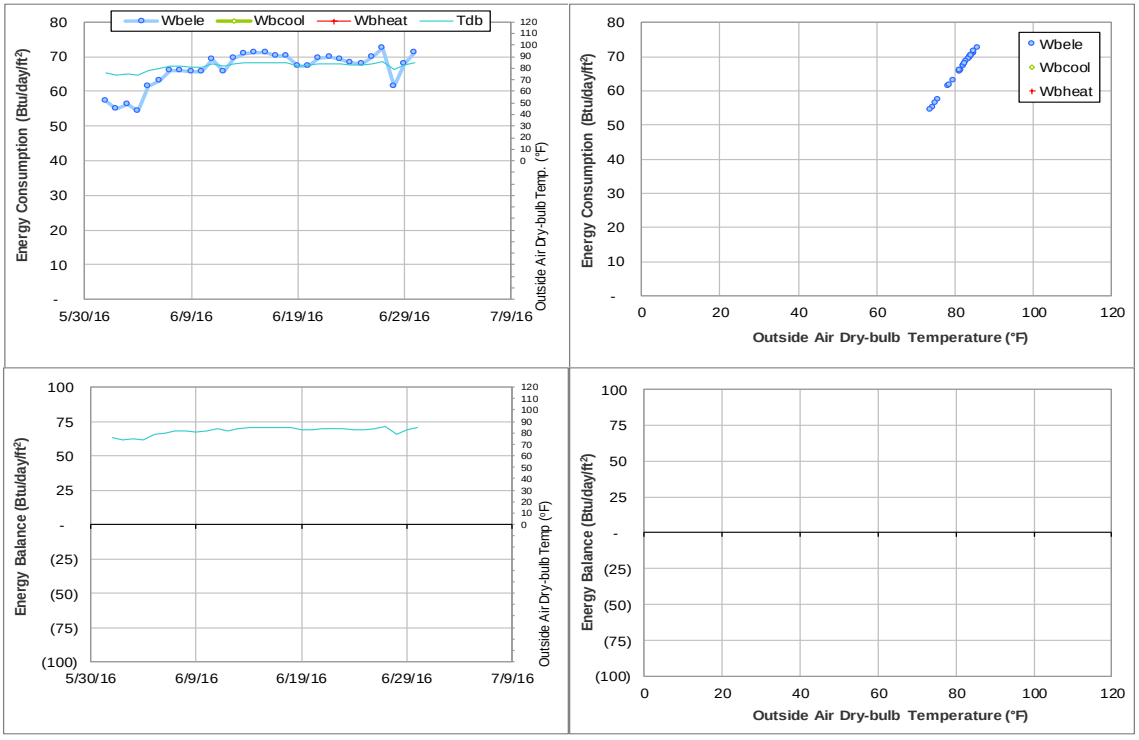


Figure V-21 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during June 2016

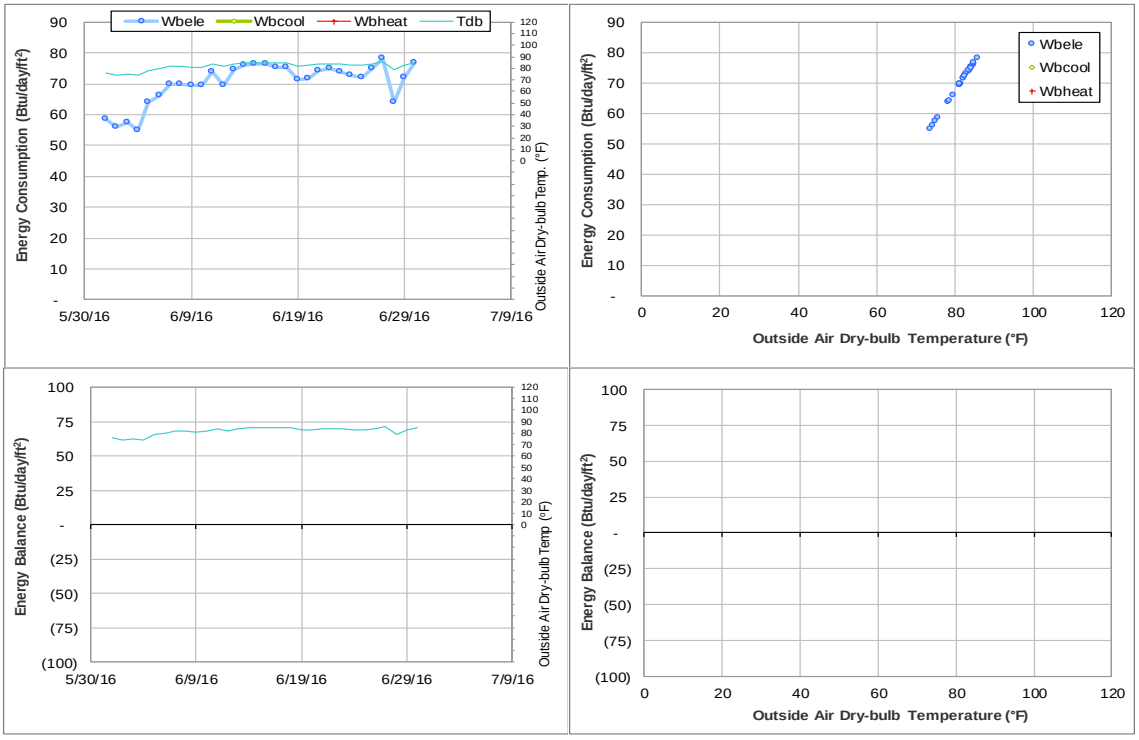


Figure V-22 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during June 2016

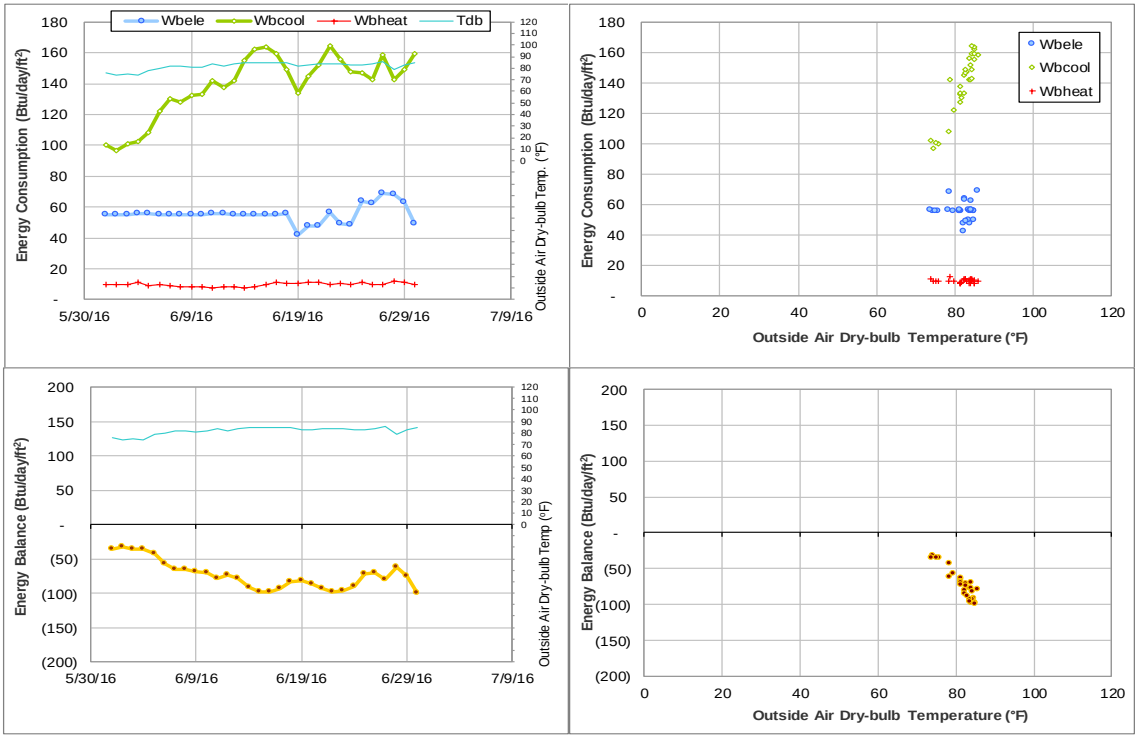


Figure V-23 White Creek Apartment 1 and White Creek Apts Activity Center TAMU BLDG # 1589 Energy Balance Plot during June 2016

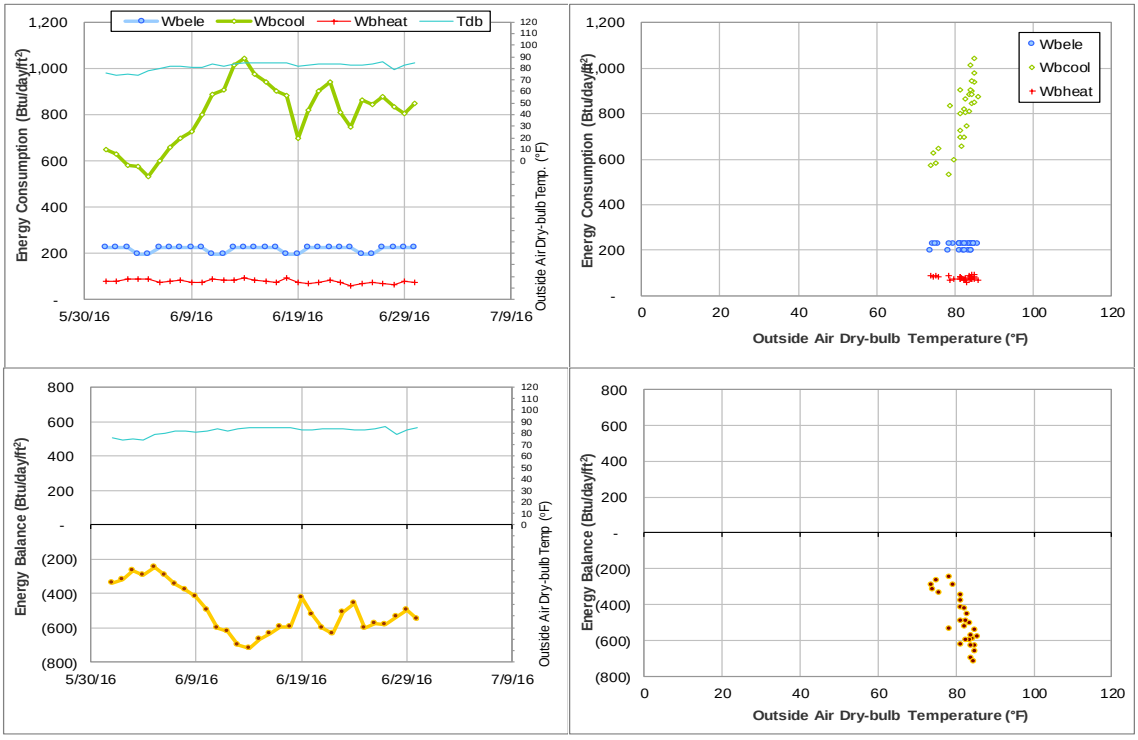


Figure V-24 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during June 2016

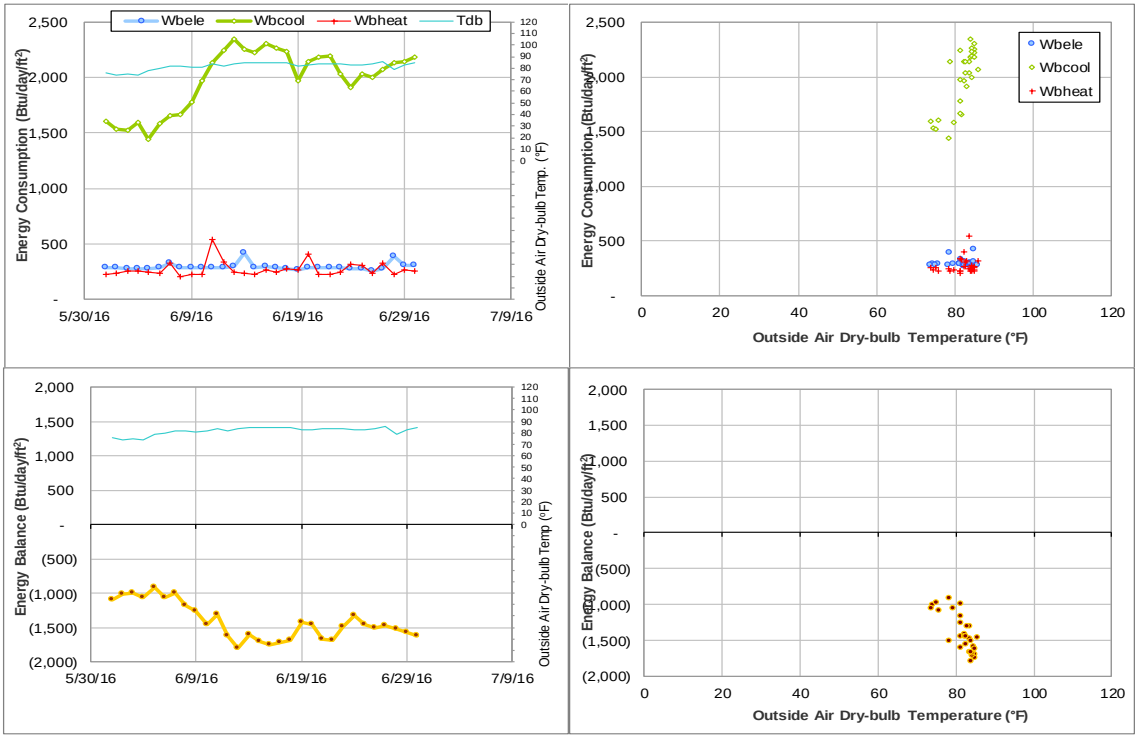


Figure V-25 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during June 2016

VI. Appendix

ENERGY ANALYSIS GROUP

ENERGY SYSTEMS LABORATORY
TEXAS A&M ENGINEERING EXPERIMENT STATION

Project: TAMU: Energy Analysis*

Report: Energy Consumption Data Quality Assurance/Quality Control Assessment Report for the Month of June 2016

Prepared for:

Utility & Energy Services

Division of Administration

Texas A&M University

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Dr. Juan-Carlos Baltazar, and Dr. David Claridge

Date: July 2016

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